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The MIDNITE SOFTWARE GAZETTE

The PAPER

A BI-MONTHLY JOURNAL OF NOTES, REVIEWS AND ARTICLES

The First Independent U.S. Magazine for users of Commodore brand computers.

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WELCOME

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****

Names abbreviated this time are: Brent Anderson (BA), Jay Dellow (JPD), Fran Donovan (FD), Jerry Key (JK), Bill McDannell (BMD), Jim Oldfield (JO), Nita Rybolt (NR), Jim (JS) and Ellen (ES) Strasma, Larry Woolard (LW), and Tom Zurkammer (TZ). To see your name in print, just drop us a line, or a line drawing, or an article, or...

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THE MIDNITE XPRESS NOTES

Midnite Meanderings

by Jim Strasma

CHURCH TELEPHONE EXPERIMENT:

Anyone dying to reach the Strasmas via the SOURCE now may. (Reach us, that is.) I'm participating in a 3 month experiment of United Methodist Communications using NEWSNET and the SOURCE to speed communication within the denomination. My Source "name" is STS Ø51. Since I'm only likely to check my electronic mail a couple of times a week, truly urgent messages should still be dialed direct and left on our answering machine if I'm not around.

HELP FOR READERS:

Whenever possible, our reviews contain several facts to help you evaluate products. These include: the address of the company (printed at the end of each issue under Resources), required equipment, usual price to the nearest dollar, type of copy protection (if any), and warranty. If a product interests you, but you aren't sure about buying it, see if your local dealer will demonstrate it to you. If not, write the company directly. Some offer demo disks or videotapes that show the product's features, while others sell just the manual. If you can't understand the manual, don't buy the product. If your equipment is unusual, ask the company to recommend the proper version for your needs. You can also judge service by how quickly the company responds to your letter.

Pay attention to warranty and support policies; you may need them later. In Midnite we list four levels of warranty. Best is a "full warranty". This means the company stands behind the product. Next is a "limited warranty"; pay attention to what isn't covered. If a product says nothing about a warranty, we list it as "no warranty". Here you are slightly covered by laws setting minimum standards for salable products. Last and worst (and proliferating) is the "anti-warranty". Each says, in varying legalese, "You bought it. It's yours." We are constantly amazed that otherwise-reputable companies will offer less protection to the customer than accompanies a used car, and still more amazed when customers shell out over $1ØØØ without even a promise to replace worn-out diskettes. One other important bit of advice: never pay in full for an unseen product you cannot afford to lose. The recent bankruptcy of the "CompuPlus" chain in California left thousands of people out their entire "paid in full" deposits on Apple computers. If the company is local, a fractional deposit on special or back orders should be adequate. If buying by mail, C.O.D. is a good way to order from companies you don't know, and only costs a bit more.

HELP FOR COMPANIES:

During the past week I heard about three companies unhappy with reviews of their products in Midnite. A columnist in another magazine told me about one company. I received letters directly from company officers of the other two companies. The letters impressed me greatly, because both companies felt their products had improved, and enclosed updated versions to prove it. I appreciated the forthright, but polite and non-threatening tone in both letters. One company also showed the review to customers and suggested they write a second opinion; two did, which is the best response of all. After all, our reviews are only one person's opinion, and inevitably flawed. We still try to print at least excerpts from all signed independent reviews we receive.

The second company's product showed great improvement, but still had important faults. Inspired by their effort to clear their name, I suggested further essential improvements, and delayed the requested review update until they can respond. For a company with a thick enough skin to endure a critique, this amounts to free consultation. Whatever you may feel when a reviewer torpedoes your latest, Midnite wants you to succeed--with a first-rate product.

There is a natural temptation, when your program is unfavorably reviewed, to get even--by witholding ads, dealer orders, or a subscription. But Hell hath no fury like editors on a rampage. By witholding ads, you take away whatever incentive the magazine had to get along with you, as well as the ad revenue that would allow them to check with you about questionable aspects of your product. I doubt it was accidental that Commodore got little favorable mention in the U.S. press until it placed ads in industry magazines.

There's no way to keep your product from being reviewed in Midnite; our readers see and write about everything. Therefore, do what you can to make the experience wholesome. If the product isn't good, don't sell it! If you fear a review will come from an unhappy customer, send us a review copy. If you wish we'd call before printing negative reviews, suggest that we call you collect with any questions. If the copy is a prototype, or has preliminary documentation, say so. Give special attention to your protection methods and warranty. No business program will get a fully favorable review unless it includes a way to make at least one archival copy. Even on games, our reviewers are distinctly nervous about $50 programs that can't be copied and have no media warranty. If you won't stand behind your product, why should we?

Advertising Notes

COMMODORE DOGGY BAG:

The Allen Products Company has announced it will give away 1,100 Commodore computers to promote its Alpo dog food products. Commodore 64 computers will be awarded to 100 grand prize winners during the Alpo "Lucky Dog" Supergame, while 1000 first place winners will receive Commodore VIC 20 computers.-Computer Retailer

RESPONSE TO ADVERTISING WITH COMPUTE!:

I read with interest your notes on getting advertising with Compute! This does not appear to be uncommon. For many years I have been an audio enthusiast. Audio, probably one of the largest audio magazines would not accept advertising from any of the smaller publications, many of which far outshone it in content, just as the M/P outshines Compute!-Gordon Watson

REBUTTAL TO COMMENTS ON SPECTAVIDEO COMPARISON AD:

I wanted to offer a long-winded rebuttal to your comments on the Spectravideo comparison ad. [He did, too.-ED]

S-V shouldn't feel too bad. Everyone makes those kinds of mistakes in their comparison ads. Why, the Commodore himself has been known to tell a fib now and then.... Considering the real differences between home micros, it is too bad that the marketing people at most computer companies don't seem to know enough about computers to play up the advantages of their machines, rather than making some up. The only exception I have seen is the recent Commodore ad, comparing the prices of their peripherals with those of Atari and TI. It was the first such ad that I thought was completely accurate and fair, stressing a real advantage rather than trumping one up.-Sheldon Leemon

ATUG Notes

by Ellen Strasma

TPUG COPY SESSION:
JS has provided librarian Brent Anderson with 51 diskettes from the TPUG copy session May 14-15, 1983. Write Brent for a listing of the new diskettes, and be sure to specify which machine you use. The diskettes are divided into groups, by type of computer (CBM/PET, 64, VIC or SuperPET).-ES

MAIL LIST 1541 DISKETTE:
The very popular Bennett's MAIL LIST 4040 program has finally been converted to the 64! Now entitled MAIL LIST 1541, it will be available on diskette July 1, 1983, for $15 from Jim Strasma, 1238 Richland Av., Lincoln IL 62656. For development costs, we ask $5 extra for each additional copy you will make for others.-ES

UNASSEMBLER:
Using [JS's] UN-ASSEMBLER program has been the single most educational experience I had all [last] year! I literally tripled my knowledge of assembly language in a week's time, simply by analyzing various programs that I had laying around. Once again, congratulations on an excellent program. Commodore should include it as a standard accessory with their assembler package! [It is included in the ATUG library]-Thomas Henry

COMAL Notes

by Len Lindsay

I have just returned from my trip to Denmark (COMAL's "birthplace") and then to England, to help clarify coming implementations and plans for COMAL.

CBM COMAL VERSION FOR THE COMMODORE 64:
It looks like negotiations are finally being concluded between UniComal (the CBM COMAL people, formerly with Instrutek) and Commodore UK on the CBM COMAL version for the Commodore 64. We can expect to see a disk-loaded COMAL (version 0.12) about 9/1983, and a 64K! plug-in cartridge (version 2.00) about 12/1983. A CBM COMAL version 2.00 (in 10 EPROMs) will be available in late fall, as an update for the COMAL ROM board or new COMBI board. The COMBI board should be available this fall, with 128K of RAM, a REAL TIME clock/calendar, and CBM COMAL in EPROM. Not only can its RAM memory exactly duplicate the Commodore 64K expansion board (at about the same cost), but also use its extra memory automatically to upgrade ANY PET or CBM model (except BASIC 1.0) to a 32K/96K machine. For a bit more, the real time clock and CBM COMAL in EPROM is included. The COMAL system uses the extra 128K as a "virtual memory" system, transparent to the user/programmer, via external procedures and functions.

VERSIONS AND STANDARDS BEING SET:
COMAL is already used in schools in ENGLAND, IRELAND, and DENMARK. In addition to the CBM version, there is a version for the APPLE II, RC PICCOLO, and CP/M with a second CP/M version expected this fall.
In June, the COMAL Standardization Group will have its second meeting. They are preparing a proposal for a standard COMAL for the ISO (International

Standards Organization). This is the same route PASCAL took, attempting to bridge its many implementation differences.

INDUSTRIAL APPLICATIONS IN DENMARK:

While in Denmark, I visited an airport controlled by two Commodore computers and CBM COMAL. The two computers "talk" back and forth to monitor all weather conditions via sensors placed in various field locations. The airport had first tried BASIC to control the computer, but found it much too slow. With the much faster COMAL system, the airport is the first in Scandinavia to let planes land with zero visibility -- quite an accomplishment! I also visited three businesses happily using CBM COMAL in industrial control, because it was so easy to write and maintain their programs. One COMAL system relied on the CBM Datasette, instead of a disk drive. The controlling PET computer had COMAL in ROM, and only needed to load one program at the start of the day.

U.S. COMMODORE SOFTWARE DISCOVERS COMAL:

Commodore's new Software Director discovered CBM COMAL at the Hanover Computer Show, and wanted to know why nobody told him about this fantastic new language... Perhaps COMAL may now be supported in the US by Commodore. Will home computing take another giant step forward this fall? The college in St. Cloud, Minnesota has reportedly already ordered 2Ø Commodore 64 computers WITH COMAL Cartridges (supposedly even with a part number).

MORE USER GROUP AND MAGAZINE SUPPORT:

A third COMAL journal now exists, from Ireland. Another COMAL User Group exists in Alberta Canada, in addition to the COMAL subgroup in Las Vegas. I still am trying to get either a diskette or cartridge copy of COMAL for the 64, so that I can test 8K of Commodore 64 control procedures I've already written.

If you are interested in CBM COMAL on diskette or EPROM, or in any of the 4 COMAL books, the COMAL INTEREST GROUP can help you. (See their ad.)

CBM/Pet Programming Notes

by Jerry Key

MAKING COMMODORE 64 PROGRAMS WORK ON THE PET OR CBM:

Jan Mathis reported having problems with the method used to load, list, modify and save to tape or disk, 64 programs using the PET/CBM. The process was written to use the PET/CBM as a tool for the 64, not to make 64 programs run on the PET/CBM. If you want to get 64 programs into the PET/CBM so that they can be used on the PET/CBM (with modifications), then it's a new ballgame. There are a number of ways to do this. Remember, these methods apply only to BASIC programs.

[If you have no utility programs (to extend BASIC or to extend the monitor), then look at the PET to VIC or 64 update below-ED]

The first method is with an extended BASIC utility, such as SYSRES (a commercial program) or BASIC AID (in the Public Domain). With SYSRES, you need only merge the program from disk (as opposed to load) into blank memory (new first). It's then stored at the normal PET/CBM address and needs no pokes. Modify, save, or whatever, as you would normally treat a program. With BASIC AID, find the first line number of the program that uses pokes, and make sure the number is above Ø. Reset the machine and enter:

```
Ø REM ANYTHING
```

What you use doesn't matter, as long as you have a single line program with a line number less than the starting line number in the program to be merged. Then merge the program, delete the line first entered and type LIST. Now it should be at the normal PET/CBM address to do with as you desire. If you save this program to diskette, it can now be loaded in the PET/CBM, 64 or VIC, because the

relocating loaders on the 64 and VIC don't care what the save address was on a standard command of 'LOAD"name",8'. [NOTE: However, if you do not use 'LOAD"name",8,1' on the VIC or 64, then machine language programs will be loaded at the start of BASIC, not where they might normally go.]

Another way to treat 64 BASIC programs on the PET/CBM is with an extended monitor like SUPERMON or MICROMON (both in the Public Domain). Load a version of SUPERMON/MICROMON that resides in high memory.

1) Type NEW.
2) Load the 64 program you want to work on.
3) Type SYS4.
4) At the . prompt, type M 002A 002A (rtn). The first two double characters after the 002A should be noted in reverse order (8A 10 is 108A).
5) Type either G (SUPERMON/MICROMON address), or X and SYS the address.
6) Now type T 0801 (address noted above) 0401, such as T 0801 108A 0401.
7) Type G B4B6. You may return to the monitor or BASIC with a syntax error, but no matter, the work is done and the program is relocated at the normal PET/CBM addresses. The G B4B6 rechains the forward pointers to tidy it all up.

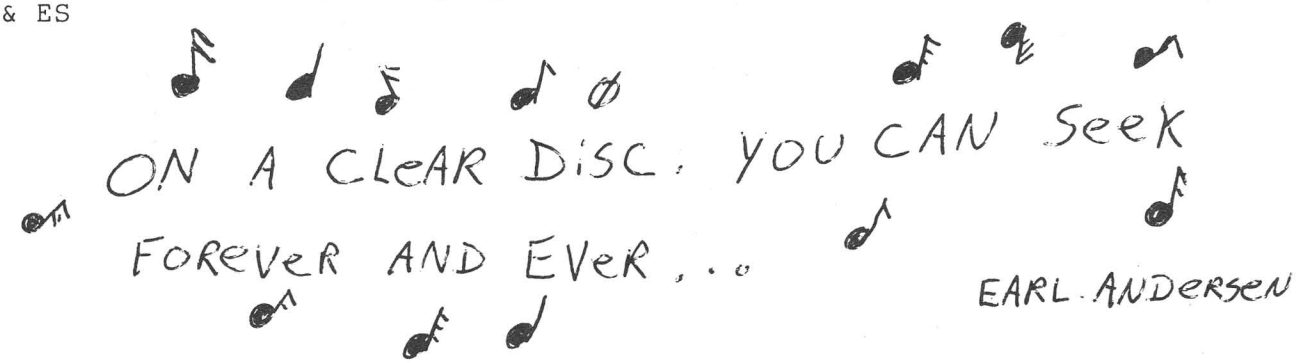
If you do not have BASIC AID or one of the similar utilities, see your local user group for a copy of the HELP DISK or get a copy from ATUG. The instructions for its use are on the diskette.-JK

PET TO VIC OR 64 UPDATE:

Here is an update and explanation of the program Dan Gauwitz uses to load VIC or 64 programs into a CBM or PET machine. Just load this program into your CBM or PET computer. When the screen instructions say so, press the play button on the cassette to load the VIC or 64 program. The program takes care of everything else.

```
20 for j=0 to 2:rem puts three zeros at start of program
30 : poke4096+j,0:rem for VIC (+3K) start address
40 : poke4608+j,0:rem for VIC+8K expander start address
50 : poke2048+j,0:rem for 64 start address
60 next
70 print"[clr] [rvs] [down]"tab(20)"VIC or 64 to CBM/PET"
80 print"[home] [03 down] load"
90 print"[08 down] poke 41,16":rem for VIC with 3K expander
100 print"[02 down] list"
110 print"[02 down] poke 41,18":rem for a VIC with 8K expansion or more
120 print"[02 down] list"
130 print"[02 down] poke 41,8":rem for a 64
140 print"[02 down] list [home]"
150 for i=623 to 625
160 :  poke i,145:rem necessary cursor ups
170 next
180 for i=626 to 632:rem input buffer
190 : pokei,13:rem carriage return
200 next
210 pokel58,9:new:rem number of characters in buffer
```

Now you can either modify the program to work on the PET or CBM before running it.-DG & ES



Commodore 64 Notes

by Ken Penny

The Adventures of Max Maxwell

DAY 5: Interface with a What?

Max Maxwell tests his computer-controlled door lock one more time, watching the bolt slide smoothly into place at his command. Called outside to help his wife with the groceries, he hears the bolt engage behind him, and turns to see his neighbor adjusting his garage door opener....

THE WORLD ON A WIRE...

Whenever someone asks me, "Can my computer talk to a 'blank'," the answer is always "yes." That's the nice thing about computers: anything is possible. However, I'm usually out of earshot by the time they ask "How?" Without getting too technical, there are several ways to attach your computer to the wire that connects you to the world waiting on the other end. First, a question:

DOES IT TALK RS-232?

The second easiest method of interfacing with the real world is through the RS-232 port. (I'll write about the easiest method next issue.) The VIC and the 64 both output 5 volt inverted RS-232 directly from the user port. The CBM RS-232 cartridge will invert and increase the voltages, giving true RS-232. Then you just have your software open a channel to device 2 and start talking. This is all covered very well in the VIC Programmer's Reference Guide, but watch out. There are some real problems and challenges with the RS-232 operation.

THINGS IT DOESN'T DO

For example, full duplex operation is nearly impossible; the port will not transmit and receive data at the same time. If a character comes in while you are sending data, the timing will mess up, and neither will work properly. Likewise with RS-232 and disk or printer operations; timing on the serial bus is so critical that it takes over the clock and won't let characters be received.

One other thing you may want to do is change some characteristics of the RS-232 channel after a program is running, such as setting the parity or the baud rate. It can't be done on the fly. You must close the current channel and reopen it with the new parameters. Since this operation defines a buffer area at the top of RAM, it does a CLR, erasing all your variables.

THINGS IT DOES DIFFERENTLY

The RS-232 communication channel is also a bit confusing in its protocol and quite different from other channels that you might open. For example, when you do a GET command from a disk, cassette or other such device, and there are no characters waiting, the (status) variable ST becomes 2. This is a good way to tell if you got anything.

The RS-232 channel does it differently. In both the VIC and 64, the RS-232 status is stored in a different place: hex location $Ø297. Testing the variable ST will read it, but not as a 2, unless the buffer overflows. If that occurs, you've lost it all. If there are no characters waiting, the 64 will return a status 8. The VIC will return a status Ø in either case; you have to test the character to see if one was received. Thus, the easiest programming method (get a character and test its validity) doesn't work well, especially in machine language. Instead, you must test the input buffer pointer and input buffer index to see if they match. If they don't, there must be a character there.

THINGS IT WILL DO

Luckily, Commodore hasn't been entirely asleep. The first Kernal ROM, the -Ø1 ROM, had a problem with the last buffer full of characters: it didn't always get sent. The -Ø2 Kernal ROM also fixes that.

The RS-232 port will talk in many configurations, up to 19200 baud, and with options for parity, mark/space and word length. It's a quite versatle port, capable of matching the requirements of most anything you want to talk to.

> As the locksmith presents his bill, he notices the 64, faintly chuckling in the corner of the computer room. A light pops into Max's eyes, deals are made, and the locksmith leaves, paid in full with a copy of Max's latest protected software, due for some scrutiny on the locksmith's 64.....

And From Our Readers:

CASSETTE FILE PROBLEMS:

I am having a problem with my Commodore 64 and my 1541 disk drive. I got very little satisfaction when I discussed the problem over the phone with Commodore at Wayne [PA]. I can create a short test program to write files onto a cassette tape and then read them back again. It works fine, until I run the program while the disk drive is on. Under that circumstance, I can still write files to the cassette, but if I try to read a file from the cassette, I get a "string too long" error indicating the computer does not see the delimiter. If I run the identical program again with the disk drive off, it works perfectly. I can even read files that were written when the disk was on. I've tried all the various delimiters without success.-Bill Batcher

REPLY: The simplest answer is that your cassette drive may be too close to your disk drive, causing data to be lost or altered when saved. The cassette drive is very sensitive to any electrical interference, whether from the TV, disk drive, power supply or phone. If that isn't the problem, we don't know the solution - yet.-ES

DON'T LIKE BLUE ON BLUE START UP COLOR?:

For those of you with Commodore 64's and disk drives who don't like the blue-on-blue start up color combination, why not put the color change commands in the 'boot' program of your DOS Wedge? Since I like a gray screen, I have added the following line to my C-64 WEDGE program.

3 POKE 53281,12:POKE 5328Ø,15:POKE 646,11 -JKJ (OCCUG Newsletter)

GARBAGE COLLECTION PROBLEMS:

There seems to be a serious problem with garbage collection on the 64. Programs can hang up for 2 to 1Ø minutes waiting for garbage collection. WARNING - Don't use FRE(Ø) in your program, especially if your program uses lots of strings (as mine do)!!! Every call for FRE(Ø) can take from 2 to 1Ø minutes to finish. Screen freezes, keyboard locks, even the RESTORE key doesn't work. Quick power-down and power-up also doesn't work; you must wait several seconds before turning the computer back on, re-loading the program, and taking out all of the FRE(Ø) calls from your program! -Bill Brown

"@SAVE":

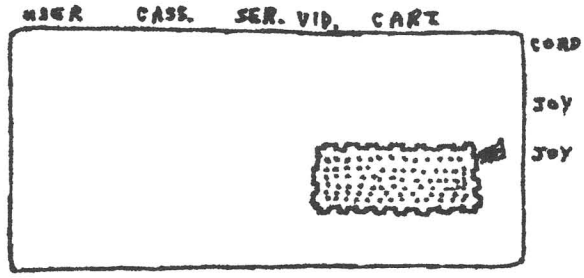
There were some comments about losing programs using "@SAVE." I've found the Save/Replace program on the 64 to be destructive. In fact, I have a short program for compounding interest that gets wiped out so often I put it on discs under three different names trying to preserve it! But it sometimes goes with the regular SAVE.-Gerald T. Smith

REPLY: Contrary to earlier advice, I now find my results are better on my 1541 if I format my diskettes on a 4Ø4Ø, not the 1541. Our inside information

suggests a 1541, that works at all well is a rare gem, but the problem isn't the @SAVE, but a shoddy Japanese disk drive mechanism.

WHAT IS...?

Thanks to Ken Penny for clarifying the situation on the -Ø2 ROM. My gratitude would be even greater if I knew what an RF box was and looked like, or a "regulator" and a "heat sink." I suppose getting things down to my "primary-grade" level would destroy Midnite's character - though a lot of your new subscribers may share my ignorance.-Gerald T. Smith



RF BOX

REGULATOR

HEAT SINK

Commodore Notes

CES REPORT:

The big Commodore news at the Chicago Summer Consumer Electronics Show, still in progress as this issue went to press, was prices. Dealer costs on virtually everything Commodore sells have been slashed drastically in the past month, with the notable exception of VIC equipment. Commodore brought their large "Clipper" ship to the show, full of products and programs. The SX-64 portable 64 system was still partly hand-built, but didn't look it. It may sell for $8ØØ, including 1 disk and a color monitor. The 1526 printer is an upgraded 4Ø23 for the VIC and 64. The 156Ø auto-dial, auto answer direct-connect VIC modem looked finished, as did the piano keyboard, the digi-drums and the graphics tablet. The "B" was there, in a corner, as if we should forget about it.

Lots of 64 software was shown working, and VERY reasonably priced. The MANAGER, one of the best CBM databases, has been greatly enhanced, and will sell for one-fifth the current price. MAGIC DESK is a mini-LISA, with joystick directed objects controlling usual office functions - mostly for beginners, but VERY useful to them. SIMON BASIC, PILOT, LOGO, and several new games were shown, along with renamed 64 versions of MACTERM, Info-Designs' accounting software and CALC RESULT. All are slated for price reductions under the Commodore label.

The weakest link was the sales pitch. No one gave even retail prices to the dealer I was with, nor did anyone ask him for an order, or accompany him around the boat. On the other hand, the half hour ride to the boat kept him from seeing any other brands.

Quoteable Quotes

STOCK IN COMMODORE:

"...had you invested $1,ØØØ in Commodore stock in 1974, it would be worth nearly $7ØØ,ØØØ today. Adjusted for stock splits, the stock went from a low of 12 1/2 cents in 1974 to a high of 86 1/4 this year."-W5YI report, April 1, 1983

Competitors Notes

ATARI (tm):
At CES, Atari introduced a complete new line, replacing all existing models for Christmas. Most impressive to me was a $350 letter-quality printer the size of a shoe box. The new top model, the 1400XD had a built-in disk, modem and voice synthesizer.

COLECO (tm):
Coleco drew a lot of attention at CES with Adam, a new $600 (retail!) computer that includes 80K RAM, a real keyboard, a stringy-floppy cassette, a daisy-wheel printer, built-in word processing and the ability to run all Coleco game cartridges.

ENTEX (tm):
Entex is promoting a $125 add-on for video game machines that makes them into a Z80 computer with 8K BASIC and 2K RAM. Sheldon Leemon wonders who will buy it, when complete VIC's sell for well under its price.

IBM (tm):
John Dvorzak of Infoworld expects IBM to do three things about the PC within two years: bring out its own software for it, dropping existing royalty arrangements; replace existing dealers with its own stores; and fiddle with its hardware enough that outside products won't work with it. Dvorzak also asks, "Why did I hear a rumor that Apple will ship **no Lisas in 1983?**

MATTELL (tm):
The Mattell Aquarius, with its rubber duckie keyboard didn't attract much praise at CES. (Neither did I, when I used it to call the Commodore Information Network.)

OSBORNE (tm):
Adam Osborne has unveiled the EXECUTIVE, a new transportable. The major change is a barely-larger 7" amber screen with 80 columns. Disks are half-height and double-density, and memory has been increased to 128K. A further upgrade is promised for Fall, to give the new model an 8088 and MSDOS, for IBM "PC" compatibility. All the software of the earlier model is retained, plus PERSONAL PEARL (a program generator), UCSD PASCAL, and a promised terminal package. The new model will cost $2500 with Z80 plus CP/M+, and $3200 with an 8088 plus MSDOS.

SPECTRAVIDEO (tm):
Spectravideo was at CES with a new model 328 that had real keys; however, it lacked the built-in joystick of the model 318.

TRS-80 (tm):
Radio Shack is on the move again. This time it's the TRS-80 Model 4. A proper model 3, it abandons the shoddy grey plastic Tandy case, and adds a badly-needed 80 column display, numeric keypad, RS232 port, parallel port, and print spooler. It comes with 64K of memory (expandable to 128K), LDOS (much better than their TRSDOS), and a 4MH Z80 processor. At $2000, it is cheaper, faster and likely better than the 3. Tandy includes a spare ROM that lets the 4 function identically to the Model 3, and emulate the old Model 1, even reading and writing its diskettes. Except for the black and white screen, this new model is a jewel, unlike a highly forgetable little rubber-duckie keyboard computer Tandy released about the same time.-JS

Copyright Notes

COPYRIGHT STATUS ON UPGRADE ON ROM'S:

I think you have gone over it before, but what is the Copyright status on upgrade ROM's? The old 28 pin ROM's are hard to find now, so I was considering making a wire wrap board to use 2716's containing the upgrade ROM contents. The first consideration though is to remain within the law.-Dan Kapsch

REPLY: Commodore and/or MicroSoft owns the copyright on upgrade ROM's. Better Solutions [see M/P#11] sells a BASIC 4.0 upgrade board for your machine. BASIC 4.0 itself costs about $50 from Commodore.

C-64/VIC 20/PET/CBM OWNERS

WALLBANGER - Blast your way through the dodge'm, blast'm, and attack modes. If you destroy the bouncing balls before they destroy you, the walls close in for the next round. WALLBANGER is written in machine language, has great sound, and encourages complex strategies.
CASS/5K/VIC 20
ALL 40/80 COLUMN PETS & CBMS ..... (Includes Shipping/Handling) **$19.95**
[CALIF. RES. ADD 6% SALES TAX]

CHICKEN CHASE - Help your hapless hen avoid hungry chicken hawks, sneaky coyotes, and fiendish zompys. If your chicken gets into trouble, "hyper-hen" to a new spot on the maze. If your chicken travels the entire maze, you advance to the next level where the action is faster and the predators more numerous. Hi-res graphics, great sounds, and machine language help make CHICKEN CHASE a hilarious fun-filled game for the whole family.
C-64/CASS/5K/VIC 20 ..... (Includes Shipping/Handling) **$19.95**
[CALIF. RES. ADD 6% SALES TAX]

ROADTOAD - Hop your toad across 5 lanes of traffic, avoid deadly snakes, and dodge the dreaded toad-eaters. Cross a raging river full of logs, turtles, alligators, and park your toad in the safety of a harbor Each time you park 5 toads, you enter a tougher level where the action is faster and the toad-eaters are more numerous. ROADTOAD is written in machine language and uses high resolution graphics. The sound effects are excellent and you can use a joystick or the keyboard to control your toad.
C-64/CASS/5K/VIC 20 ..... (Includes Shipping/Handling) **$19.95**
[CALIF. RES. ADD 6% SALES TAX]

Write For FREE Catalog

NIBBLES & BITS, INC.
P.O. BOX 2044
ORCUTT, CA 93455

Write For FREE Catalog

WARNING! These games cause high panic levels!

C-64/VIC 20/PET/CBM OWNERS

Dealer Notes

CHUCKLE OF THE MONTH:

"They've been reading very positive reviews about us. We were endorsed in a review in Compute! magazine in April and will receive another glowing review in Commander in May."-Quick Brown Fox press release for the new '64 version, somehow failing to mention another review...

COMMENT: There is no connection at all between Foxfire Systems, originators of the nifty VIC cassette magazine, FOX 20, and either the company or the program called QUICK BROWN FOX. Foxfire Systems feels they have prior claim to the fox image, and definitely don't appreciate being confused with the Quick Brown Fox company. Angela Reiser of Foxfire Systems reports that at the recent West Coast Computer Faire, people refused to believe Foxfire Systems and FOX 20 magazine have nothing to do with it. (Believe it. There's no connection.)

Colin Thompson reports his favorable review of QBF in Commander covered only the VIC version. He only recommends using the program with an 80-column adapter board and expansion memory. According to a recent mailgram, QBF will be sending the 64 version for review. Look forward to a full verdict next time.

CREDIT CARD PURCHASES:

Credit card purchases in which the customer is dissatisfied with product performance do not have to be paid pending resolution of dissatisfaction ONLY ON PURCHASES MADE WITHIN THE STATE OR WITHIN 100 MILES OF THE PURCHASER'S RESIDENCE. This will not help most of us in buying computer products by mail.-Jeff Andrews (OCCUG Newsletter)

SHOPPING AT MICRO-PACE, CHAMPAIGN, IL:

I especially look forward to my annual June trip to Champaign, IL to visit my mother-in-law because I will be able to shop Micro-Pace. Computer Country here lost total interest in the 64 when the discounters began selling it - and never carried much of anything for it, anyway.-Gerald Smith (Florissant MO)

MEIZNER IN THE NEWS:

It's always fun for me to read about our readers, and especially to "see" them in a photo after chatting only by phone. Lilly Toback, pictured at right, is one of our subscribers and dealers, and also, as she likes to remind me, "the largest Commodore dealer in New York City." The photo is from the April issue of Computer Retailer, which interviewed Lilly at some length on the subject of computer supplies. New Yorkers in need of paper, ribbons or diskettes will find a wide choice at her Meizner Business Systems, along with the current issue of Midnite.

SCHOOL COURSEWARE JOURNAL:

[I've had] some severe problems...with the School Courseware Journal out of California. I sent them a check for a sample disk in November, which they cashed right away. I called them (by very long distance!) in January, February and March to find out why I hadn't received my disk and documentation.

Excuse #1 - They were re-organizing their efforts (bankruptcy?), but would send out my order that day.

Excuse #2 - A month later; they had to wait for reprinting of the PET documentation. I said a photocopy would be okay, so they replied that they would send it out that day.

Excuse #3- A month later still; there had been some changes in staff, but my order would be shipped out that day.

My School Courseware Journal finally arrived last week [May], almost 18 weeks after my check was cancelled. In the interim, they have sent out more flyers advertising their product at about 50% higher price than what I had seen in November. Warn your readers to beware of this company.-Bill Brown

SOFTWARE SAMPLER(tm)

As author of the PETpourri column in Microcomputing magazine I receive many letters each month with various questions on Commodore systems. Lately I've been getting requests for more information on what software is available and where people can write for catalogs. Many computerists do not live near a computer store where they can go to see what programs are available and how they run.

To alleviate the problem, I'm assembling a collection of sample programs from leading companies, called the SOFTWARE SAMPLER (tm). The programs will be under 16K long and grouped by system type, with separate diskettes for PET/CBM, Commodore 64, VIC 20, and future Commodore systems. The diskettes will be available in both 4040 and 8050 format, and will be mailed, at a nominal cost to cover reproduction and handling fees. When more than one program is submitted by a single company, the programs will be put on separate sampler diskettes for more variety. If your company would like to participate, please write as soon as possible.-Robert W. Baker, BAKER ENTERPRISES, 15 Windsor Dr., Atco NJ 08004

Discount Notes

QUESTION: How do you get a publicity release published in the Midnite?
ANSWER #1: Answer a "Wanted" question from our pages.
ANSWER #2: Have a reputable company offer a discount to readers.

ADA 6410 RS232 INTERFACE:
CMC has just announced the ADA 6410, a bi-directional RS232 interface cable for the 64's user port. Till June 30, user groups may order it for $60.30 postpaid instead of the $79 retail price. It answers to device 2, is powered by computer, has a 6' cable, and comes with either a female or male connector.

COMPUTER COVERS:
"Chief Cook & Bottlewasher" Pam Poirot of Countryside Upholstery, Rt. 2, Box 85, Golden City MO 64748, offers to make custom computer covers at low prices (thanks to the low overhead of her rural location). A VIC cover, for example, is $6.50 postpaid, in any of 19 colors.-JS

COMPUTER TABLES
Surrey Associates Inc., of 5 Surrey Rd., New Hyde Park NY 11040, offers user groups a 30% discount on computer tables.-JS

SPRITE BUILDER:
Main Menu's president, Brad Goodspeed, reports SPRITE BUILDER is now available to user groups on the same terms as to dealers, from $13-17 depending on quantity. They are at Box 98005, Seattle WA 98188. How about a review?-JS

VIC 24K MEMORY EXPANDER:
Voice World (13055 Via Esperia, Del Mar CA 92014) is offering clubs a whole 10% discount on their 24K VIC memory expander so long as you buy 3, and send details about your group. Looks like a good product; does anyone know?

AND IN THE TOLEDO OHIO AREA:
Club members get 10% off most items at: Video Computer World, 2223 Woodville Rd., Oregon OH (691-7282)

Disk Notes

ON RELATIVE RECORDS ON THE 8250:
Rumor hath it that the 8250 has problems with relative records spanning both sides of the disk. Jim Butterfield suggested once that the 8250 can take longer going from track 77 of side 1 back to track 1 of side 2 than the CBM waits before timing out. It's never happened on either our 8250 or the one at the college, though, and both use huge relative files. If it's a problem, the timeout can be defeated by poking location 1020 with anything other than 0.-JS

COPY-ALL CORRECTION FOR THE 1541:
To make the COPY/ALL program provided with your 1541 disk drive work properly, replace line 460-480 with the following:

```
460 PRINT N$;' ';T$(T9)
470 REM TO REPLACE/ELIMINATE THE OLD LINE
480 GET Z$
```

-(OCCUG Newsletter)

Education Notes

PUBLIC DOMAIN DISKETTE LIBRARY:

I was surprised to read in Education Notes (M/P#12, March/April 1983 issue, p.13) that there are 656 Commodore public domain education diskettes. At $22.50 per box of 10 diskettes, the cost for the recording media (exlusive of copy charges) would come to $1,476 (but you could reduce that to a mere $738 by double siding the diskettes.) Wow!-Clark L. Stewart

REPLY: You should be surprised, since the sentence was supposed to read 656 Commodore public domain education programs on some 50 or so diskettes. Sorry about that!-ES

FURTHER COMMENTS: Bargain of the decade is a good description of the public domain software library offered by Commodore. The fifty disk program library has very high quality software which run on any CBM, PET, SuperPET or Commodore 64. I was flabbergasted by how well the programs were written to allow school children, from pre-school through high school, to operate the computer with a minimum of hassle. They don't have to be programmers to know how to respond to questions from the machine! The programs are crash-proofed and self-documenting. No instructor need fear using them.

My eight-year-old son, Joel, is in strong competition for the PET now that he's discovered the library. He especially likes the "detective" style math programs; he must solve simple math problems to let the computer "decode" messages leading to evil master criminals and their hideout. The program doesn't insult the student for doing poorly (Joel's introduction to negative numbers). A secret code at the end is the teacher's record of that student's progress. Kudos to Commodore Canada for a job well done. Congratulations to the Canadian educational system and others for donating their work to Commodore.-Hank Mroczkowski (Hardcopy)

FOX 20's CONTRACTION ACTION:

FOX-20 (Vol.2, Nov.) has a program called CONTRACTION ACTION which spiked a lot of interest, and the results, a 100% on his spelling test, was pleasing to [my son], as well as to Kathy, my wife, and to myself. I recommend it if you've got a third grader you love.-Hank Mroczkowski (Hardcopy)

AND ON THE VALUE OF ONE-TEACH-ANOTHER...:

The Adventures of Chip, Max's nephew

by Ted Spencer

I've read about my Uncle Max's exploits on a farout new machine called a 64 with great interest. Last Christmas, Uncle Max was trying to show my aunt how she could use it in her classroom. Well, he was having trouble loading the programs (he lost the manuals), so naturally he asked his nephew for help.

And what do you suppose happened? Lo and behold, not only did his nephew (that's me!) finally learn about wedge commands (something I hadn't bothered to learn on my own 8032), but also discovered a new language hiding on a diskette, called VANILLA PILOT. In the meantime, my advice to all you "Chippers" out there is to find someone you can tutor about computer use. You'll learn a lot faster. And you'll feel very important, if you have an uncle like mine!

Missing Notes

What did we accidentally omit in the last issue? Our apologies to those affected. Readers have asked for the following information:

* **WHERE IS 'WHEN I'M 64 SOFTWARE'?:** Thanks for the fine mention of my help diskette for the 64 User's and Reference Guide, but you didn't list my address under Resources. The diskette includes all the program examples from the book, typed in and working. It is: When I'm 64 Software, 5Ø31 Hampton Court, Westminster CA 92683. The $1Ø price includes disk and mailing.-Roy Wagner

* **TOUCH TYPING TUTOR PRICE?:** In reviewing Taylormade Software's excellent TOUCH TYPING TUTOR for VIC and 64, we forgot to list the price; it's $2Ø on cassette. Taylormade is at 8Ø53 E. Avon Lane, P.O. Box 5574, Lincoln NE 685Ø5

Looks like we have a new type of review; more like a warning list, of people not to let owe you money. Unlike other reviews, these are as likely to protect vendors as buyers. Here are the current entrants in our **LOST** department:

* **DATA PLUS**, of Quincy IL and St. Louis MO gives every impression of having gone into hiding, ignoring both calls and letters.

* **JINI MICROSYSTEMS**, after offering to send a revised agreement that would take us out of the collection agency business, is ignoring us again. Needless to say, we'd like to know if they're still shipping copies of JINSAM with my JINSORT in it. It is definitely illegal for them to do so, as of May 9, 1983.

* We've lost **F.Q. GOLDINGHAM**, whose check bounced as "unknown". Needless to say, we'd like to find him (her?) again.

* And finally, **CHET LEWIS** of Progress Computers, and his bouncing check, are still out there somewhere. Thanks, TorPET, for pulling Chet's ad for us.-JS

Modem Notes

by Tim Tremmel, SYSOP
Racine BBS: 414/554-952Ø

The Midnite/PAPER is "your" magazine, and this column is for you. If you have any problems or questions, don't be afraid to write or call, either through the BBS (414/554-952Ø) or voice (414/554-Ø156). My address is on the inside front cover. If I can't answer the question, it will be printed in Midnite, for someone else to answer.

NEW BBS:
MASSPET BB (617/824-4878), 7pm-9am M-F & 24 hours Sa/Su. Contact David Rogers.

VIC MODEM:
I received the following letter from Gary Greenberg of NY, NY.

"The ads for the VIC MODEM say a modular phone is all you need for communications. This is not quite accurate. Apparently, there are two types of push button phones: some buttons push only half way, while others can be depressed fully. I had one of the former types, causing my entries to be garbled when displayed on the screen, as well as garbling much of the transmission received. Commodore's customer service gave me two solutions: 1) Get the VIC 16Ø5 adapter ($1Ø-$15) [which] hasn't reached the market yet (5/5/83). 2) Get a phone with buttons that depress all the way down. Using the 2nd solution, my problems disappeared."

ACOUSTICAL VS. DIRECT CONNECT MODEMS:

I don't own a VIC MODEM, but I know it works best with a Western Electric 500 style phone. There are actually 2 kinds of modems: acoustical (CBM8010, NOVATION CAT, etc.) and direct-connect. Within direct-connect, there are again 2 types. The type like the HAYES SMART MODEM is a complete telephone that plugs directly into the wall outlet and is able to dial out or answer by itself. The other type has 'no smarts', like the NOVATION D-CAT and the VIC MODEM, that connect in series directly thru the telephone handset. On the D-CAT, the handset is carried through and can still be used at the push of a button. On the VIC MODEM, the handset is actually replaced with the modem. You must switch back and forth by unplugging the handset cord. These types of direct connect modems don't work with phones containing push buttons or dials in the handset. With acoustical modems, if the handset doesn't fit in the cups, it doesn't work well.

DO YOU NEED PROGRAM UPLOAD/DOWNLOAD?:

Many people seem to like the program download that the BBS's provide. It is a nice system and it does work well, but in all honesty, unless you have lots of $$ to spend on Ma Bell, you would be much better off joining a user group (such as TPUG) or buying the ATUG diskettes. As good as the transfer system is, you can still waste a lot of time and money on downloads that don't work. $10 will buy a diskette full of programs. You couldn't do any better by calling around the country. But if a BBS is local to you, then it's a whole different story.

FIBER NETWORK FOCUSES ON PERSONAL COMPUTERS:

The first fiber-optic network designed to integrate personal computers into local nets is taking dead-on aim at the twisted-pair and coaxial-cable-based versions that have been available. Claiming that at $300 per connection its active-star fiber network built with 50-um graded-index glass is competititive, American Photonic Inc. of Brewster, NY, introduced its 64Net at this week's Interface show in Miami. The first version of the network, which comprises a remote terminal unit, a node, and network operating-system software, is geared for up to 32 Commodore-64 personal computers; other machines will be accomodated in the future, says the developer.-Electronic Newsletter

TERMINAL.I12 WITH IEEE-488 MODEM:

Steve Punter's program TERMINAL.I12 as found in Strasma's HELP disk is intended to be used with an IEEE SRQ line. If you would like to use this great program with a set up that does not have the SRQ line connected, such as a TNW-2000 (RS232 to IEEE-488), just add the following line to the TERMINAL.I12 program:

16 POKE 31288,169:POKE 31289,01:POKE 31290,234:POKE 31333,64

That's all you need. These pokes change the program so the device is sampled each pass and then any nulls are rejected.-Kenneth Finn

WHY BBS'S VARY:

As you try out the different CBM/PET BBS boards, you'll find they vary. Some SYSOP's have added options to their boards, while others had to remove some to make room for other options (it's a big program). Some boards are running CBM hard disks. The SYSOP of the Cheyenne WY, BBS (307/637-6045) has split his program download list into 3 parts, to reduce the search time through the file, as users have added lots of programs. Many programs can be put in 7.5 meg...or even 5 meg. You'll also find that each SYSOP has his own ideas on how his BBS should be run (as it should be). The SYSOP of one BBS might put the blocks to what you are allowed on another BBS. Users need to show some responsibility and courtesy, and act as you would want another to act if it was your system. Remember that most of these BBS's are provided for free by private individuals using their own personal computers. As soon as it turns into a '10-4 good buddy' affair, many will close up. Also remember that there are NO secrets from the SYSOP. If you have truly private messages to send, then a BBS is no place to leave it. Call the person directly, instead.-TT

Printer Notes

EXCHANGE 1515 PRINTER FOR A 1525E:

RE: Rumor you could exchange a 1515 printer for a 1525E. I called Commodore Support Group (215)436-4200 and immediately heard a taped message, which said standby. Music was played for a total phone bill of $6; then I was told that $50 would replace the faulty ROM chip in the printer (or send $25 and the chip would be sent to you). They would not exchange a 1515 for a 1525 E.-MT

NEW PRINTER RIBBONS:

REINKING 1515/25 RIBBONS: I opened one end [of the VIC 1515 ribbon cartridge]. The ribbon turns a corner around a spring-load. It's a loop! A tiny 18 inches or so of ribbon loop, and a SPONGE. The ribbon goes 'round and 'round and rubs on the sponge to ink itself. I saturated the sponge with WD-40, and listed two long programs. Inside the LEFT spool is a little plastic gear that makes sure the sponge turns. Don't drop it!-(Journal/20)

REINKING 8023 RIBBONS: See MACINKER under CBM/PET Hardware Reviews next issue.

NEW 8023 CARTRIDGE RIBBONS: I have been sending my 8023 ribbon cartridges to: West Point Products, Inc., Schoolhouse Lane, Valley Grove WV 26060. They put new ribbons in them and send them back at $5.20 per cartridge. Their quality is A-1.-Wm. Benline

ADDRESSING A NON-CBM PRINTER:

Recently I tried to format a C.Itoh Starwriter from a BASIC program, and my trusty CBM Professional Computer Guide failed to explain how to send format commands to the printer without using secondary addressing. So here is a beginner's guide to formatting this particular Diablo-type printer.

The User's Manual for the FP-1500-25 printer has an appendix describing BASIC function codes. I wanted the functions for formatting lines per inch (vertical spacing) and characters per inch (pitch). In this case, as with many printers, the ESCape code is the first function to send. This must be sent as CHR$(27) in an appropriate PRINT# statement.

The appendix then lists various functions available through ESC code. I wanted ESC L (n1) (n2) for line spacing and ESC E (n1) (n2) for pitch. Minimum line spacing on the STARWRITER is 1/48 inch, with (n1) and (n2) being the digits used as numerator over 48. Example: for 1/8 inch spacing, n1=0 and n2=6 (1/8 = 6/48). A common start-up value here is 1/6 inch, or 8/48 inch.

Pitch on the STARWRITER is a multiple of 1/120 inch, with the smallest value being available for graphic mode (a separate ESC code is provided for this.) Pica pitch is 1/10 inch, or 12/120; hence n1=1 and n2=2.

After much trial and error, I discovered the following way to send commands to the printer. (See the Qume Plotting routine from M/P #11, p.58 for examples of other ways.) With the STARWRITER, there are also a number of codes available for different modes: decimal, hexadecimal, or ASCII code. (For this, my CBM Guide was indispensable!)

```
10 rem set line spacing at 5/48 inch
20 open 1,4
30 print#1,chr$(27)chr$(76)chr$(48)chr$(55)
40 close 1
50 rem set pitch at 12 characters per inch
60 open 2,4
70 print#2,chr$(27)chr$(69)chr$(49)chr$(50)
80 close 2
```

I know letters and digits can be sent in quote mode, but I got fouled up on punctuation. The above example worked.-Ted Spencer

Reader Questions and Comments

Questions

QUESTION: About XVM for the 64:

I still can't load it, even after LOAD "XVM*",8,1 Is there a SYS command that will work? What is the difference between XVM4.8 and XVM4.C?-Herb Gross

REPLY: First the good news. Your LOAD worked fine. You merely need to type SYS 8*4Ø96 to start XVM4.8 and type SYS 12*4Ø96 to start XVM4.C, which should give budding machine-language programmers a big hint on the difference between versions and why they have 8 and C (the twelfth hex number) in their names.

Now the bad news. Andy Finkel of Commodore has just informed us that the X in XVM stands for eXperimental, and that it is NOT to be exchanged after all. It has bugs and could give a bad name to the repaired version Commodore wants to sell. Andy also asked that users stop exchanging his programs SPED and CHRED, that edit sprites and programmable characters. Therefore, our 64 exchange diskette is temporarily unavailable. Please don't exchange these programs.-JS

QUESTION: On SMART ASCII with RS232 printers

I'm still looking for a printer [that can produce] cursor and color commands in listings. Will the SMART ASCII program print out these commands? I understand it was included in a 64 dealer demo disk.-Herb Gross

REPLY: JAS reviewed SMART ASCII in M/P#11. According to her review, it DOES translate cursor graphics to letter commands in listings. However, it did NOT work with WORDPRO. See also the review of CARD? in this issue. As to which printer, I'm told the GEMINI STAR is like the MX-8Ø at a lower price, though with a bug or two. Epson itself has a newer and "better" (translate faster) printer called the FX-8Ø. A reader has one and seems satisfied.

Now about that dealer demo... I feel sure it was not authorized by Midwest Micro Associates and that they would express their displeasure if they found folks copying their products. A whole lot of stuff was exchanged last Fall that wasn't supposed to circulate, especially in the Midwest. At least one company is looking for hides to nail to the wall. Not only was their stuff exchanged without permission, but the version that got out had bugs, which could give their product a bad name, even though the legitimate version is fixed. According to Andy Finkel of Commodore, the same thing happened to some new 64 cartridges. Somehow, REJECTED versions of some cartridge games were exchanged, which could hurt both the sales and the reputation of the final versions.-JS

QUESTION: Are power spike suppressors necessary?--Eddie Anderson

See the article on this subject in the last issue. As Bob Mergy explained there, excess voltage and fluctuations of voltage can be a problem to computers. Radio Shack's TRS-8Ø Model I computer was especially sensitive to this. Radio Shack sells several computer power connectors that include spike suppression and filtering. (See under CBM/PET hardware reviews.) On the other hand, I've rarely heard of Commodore computers being troubled by surges. The only trouble I've ever had was at a users' club meeting when we tried to put a dozen PET's on the same circuit. Some worked under those circumstances, but others didn't. The real danger is lightning. This can be prevented (short of a direct hit) by a $1Ø GE spike protector, sold in electronics and hardware stores. A similar unit is built into some Radio Shack power strips.-JS

QUESTION: NEC 8Ø23A-C printer programs

I recently purchased a NEC 8Ø23A-C printer, partly because of the review by

W.L. Hinrichs in the Whole PET Catalog. Could you please provide Mr. Hinrich's address. I am interested in the demo program he offered.-Webb V. Turner Jr.

REPLY: Bill's address is: William L. Hinrichs, c/o Rock Valley College, 3301 N. Milford Rd., Rockford IL 61101.-JS

REPLY: On Pascal for the 64

Mark Niggemann asked in the April issue (p.16) about the availability of UCSD Pascal for the Commodore 64. I have been told by software personnel at Commodore that Pascal won't be ready for at least 4-6 months. UCSD Pascal takes up 96K of memory, and since Commodore 64 only has 64K, the language must be rewritten and "crunched" to fit the memory limitations. Commodore also feels that this package is not the most desired (I would think that it would be a big seller for schools), so they haven't even started working on it yet.-Ross Garber

Comments

WHAT HAS HAPPENED TO THE PET?

COMMENT #1: It seems that all the other Commodore product magazines are devoting a majority of articles to the VIC and 64. Please don't forget us old timers with PET 2008's and CBM 2032's.-Tom Alht?

COMMENT #2: What has happened to the PET? In looking at the upcoming articles, etc., for the Midnite/PAPER, not one is about the PET. I went to a Commodore Educational seminar last week and while they kept saying the 4032 is still being manufactured, all they showed was the 64! Of all the cheap(?) micros around the PET is the best for teaching programming, primarily because of its easy editing and graphics, as well as being the least indestructable. As the mistress of 39 PETs, I would like to see more on them.

Also, I would like to see a series of articles on machine language that start with "reach around the back and turn on the switch" and then continue in words of less than one syllable - on the style of Ramon Zamora and Bob Albrecht's book on TRAINING YOUR PET.-Harriet Pitkof

REPLY: How could we forget the CBM and PET models? Part of this issue was written on a 2001/32B. Since we still print most everything our readers send us, the way to get more articles, reviews or whatever for your machine or skill level is by sending some. VIC owners insist on only reading VIC stuff, 64 owners only want to see 64 stuff, and PET and CBM owners only want to see PET/CBM information. But according to Jim Butterfield, about 85% of what applies to one Commodore computer applies equally to all Commodore machines. If we review a 64 version, instead of the PET one, it's because that's what we were sent for review. But the same product for another model will work about the same on your machine, and many programs reviewed eventually become available in versions for all models. Ditto for articles; those about one model can be converted for others. Skim the whole magazine! We can't repeat everything 3 times.

We still prefer our CBM's to our 64 for serious work and will continue to publish as much as possible about products and hints for it, even though VIC and 64 each outsell it 10 to 1 now. For your first adventure into machine language concepts, take a look at next issue's article on using the monitor (built into PET's and CBM's, but provided on diskette or cartridge for 64's and VIC's).

ADD BASIC WORDS TO YOUR COMPUTER:

I would like to suggest you include articles as have appeared in **Printout**, which shows how to add BASIC words to your computer. So far on my 40 2001 with BASIC 4 (FAT 40), I have added to the $E000 ROM, the commands KEYINP, SORT, BEEP, BSCRN [stored in $9000 and turned on when my set is], LINEINP, and PADINP. There are a few more routines I would like to add.-Don R. Lash

REPLY: All the "words" added in those articles are in the ATUG library in source code form. Also, the magazine (Microcomputer Printout) is in stock at Micro-Pace Computers in Champaign IL.-JS

User Group Notes

New Clubs by Locality:

GEORGIA:

ATHENS COMMODORE USERS: SOUTHEASTERN REGION (ACUSER), Athens GA. At present, we have an active group of 20 users (mostly VIC and 64) who meet on the 2nd and 4th Mondays of each month (7:30 to 10:00 p.m.) at our local Commodore dealership to hold entry-level instruction for beginners (first meeting) and more advanced club activities (second meeting). We have just elected a president, secretary, and librarian and are working up a charter and a membership certificate. We would appreciate any help from more established clubs (ATUG, ILUG), such as 1) getting-started kits, 2) a charter and membership format that we could modify, and 3) literature on issues of user morality (software copying, pirating, etc.). -Jay Allen, Pres. ACUSER, University of Georgia, Dept. of Psychology, Athens GA 30602 (404/542-4805)

VICtims, Atlanta GA. The Atlanta area has one active VIC users groups that I know of: VICtims, P.O. Box 223, Conyers GA 30207. They have a newsletter and monthly meetings. It was started by hams and they seem to know a lot about hardware modifications (e.g., at the last meeting they had a solder station set up for upgrading 8K memory boards to 16K).-Harold Miller

ILLINOIS:

KANKAKEE HACKERS, Kankakee IL. A Commodore users support group serving the greater Kankakee IL area was formed in April of 1983 with the support of Ideal Computer Systems. They currently have over 40 active members. Their current membership is 64-heavy, but there is a large contigent of VIC owners and a sprinkling of PET and 8032 users. Meetings are the 2nd Thursday of each month. Contact Rich Westerman, R.R.#1, Box 279, St. Anne IL 60964 (815/933-4407)

INDIANA:

COMMODORE HARDWARE USERS GROUP (C*H*U*G), Indianapolis IN. Formed largely of VIC/64 users, this group has a regular 8 page newsletter (monthly?) containing useful tips on subjects like ML monitor, modem use, and good old chatter. The present membership of about 100 meets monthly on 3rd Wednesday. CHUG's TPUG membership provides public domain library access. Members bring software and hardware inventions for display. Machine language class in progress. Contact: Tim Renshaw, 9651 E. 21st St., Indianapolis IN 46229 (317/899-2003; BBS: 255-5435).-Ted Spencer

MASSACHUSETTS:

MASSPET, a Commodore User Group [in **Boston MA?**], has a membership approaching 100 individuals...with 5 sub groups: CBM, VIC 20, Commodore 64, SuperPET, and CP/M. MASSPET was established with the purpose of bringing people who owned or were thinking of purchasing a Commodore computer together to share ideas and knowledge with each other, and to create a learning experience for all. To establish a tie with all Commodore Users, a MASSPET Bulletin Board was established (617/824-4878). It operates Monday-Friday, 7pm-9am and 24 hours Saturday and Sunday. For more information, contact David A. Rogers, P.O. Box 307, East Taunton MA 02718

Old Clubs: New Activities

MISSOURI:

ST LOUIS PET SET, St. Louis MO. Membership in the group, including the newsletter, is $8 a year for those who pick up the newsletter at meetings, and $15 by mail. Send membership applications to Dan Weidman, 1541 Swallow Dr., Brentwood MO 63144. Because their "resident hardware specialists were unable to make the [small] East Room [of the St. Louis County Headquarters Library] dimensionally transcendental," the **St. Louis PET Set** has moved its meetings to the library's Main Auditorium.

The above information is from the second issue I have received of their new monthly newsletter, a vast improvement on the postcard the group used to send. The current issue has twelved pages of typeset double-columned text, including a good article on using relative files with the 64, a VIC screen poke chart, and some useful articles for beginners. Very good reading for newcomers.-JS

ASSOCIATION OF COMMODORE USER GROUPS (ACUG), St. Louis MO. I sure hope there is an explanation for the actions of our friend Tony Ott of ACUG. I sent two disks as he requested, one with my Newsletter on it and one for the BBS programs over a month and a half ago and I have heard nothing from him since. I also told him about the MASTER LIBRARY program in one of our telephone conversations and he called Norm that very night and ordered it. Now Norm tells me he sent him one right away and has never received payment for it.-G.W. Carter, Commodore Computer Club, 734 Donna Dr., Temperance MI 48182

CANADA

TORONTO PET USERS GROUP (TPUG) REPORT:

This issue was delayed a week by a singularly worthy event--the annual Toronto (ONT) PET User Group "Copyfest". TPUG '83 featured no-charge copying of 45 diskettes for members and paying guests, talks by several of the best-known personalities in the Commodore world, and commercial displays.

For me it was like coming home; I spoke at TPUG two years ago last May. Then as now, I stayed with John and Muriel Easton, and thoroughly enjoyed an elegant meal with TPUG officers. But the old home has certainly grown. Then I was a new member--number 1Ø68. During the copyfest, member #7ØØØ joined! Then the meeting was held in one room for a couple of hours. Now it took two full days and most of a very large building. About 1ØØØ members appeared during the weekend. One local member was quite thankful that most American associate members stayed away. The college would not have held them all, and the copy system could never have handled the load.

As usual, the best part was renewing old friendships and making new ones. I finally met fellow Micro editor, Loren Wright, and renewed friendship with Karl Hildon, editor of the excellent magazine, Transactor. Midnite Columnist Jerry Key was there, as were Dr. Dick Immers of our LC^4 faculty and Midnite dealer Art DeKneef. The hardest-working folks at the conference were arranger Gord Campbell, and speaker Jim Butterfield. Even so, both had time for brief chats with friends in the cafeteria. My sincere thanks to TPUG for inviting me to visit again. Apart from Lincoln, I can't think of anywhere I like better than Toronto, or a better computer group than TPUG. Highly recommended.-JS

A Giant Step for the computerist

THE PROMQUEEN

Opens up the world of modern electronics. Now – a complete microdevelopment system in a cartridge using the Commodore VIC-20. You get HEXKIT 1.Ø for general purpose 8 bit microprocessor software development, a 4K ROM emulator for testing program in circuits under development plus an EPROM programmer for making hard copy of programs. All-in-one cartridge with 100 page tutorial manual. **$199.00**

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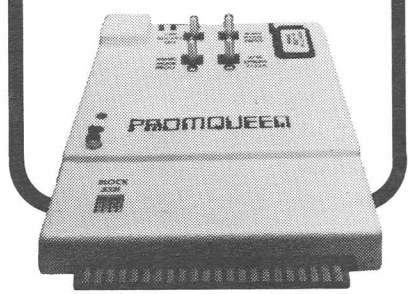

CENTRAL ILLINOIS PET USER GROUP (CIPUG) HISTORY:

Steve Malinowski of the Colorado Commodore Computer Club asks: "Please send me all the scoop on CIPUG. You know, its history and how and when it got started. And how much it costs to join if you live out of state like me."

REPLY: Now the story can be told! CIPUG was founded back in 1978 when Rick Townsend of Danville IL sent his name to Gene Beals' "PET User Notes" as the Central Illinois PET User Group. Both JO and I eventually subscribed to the User Notes and wrote Rick. He was leaving the area, but put us in touch with each other, since we lived about 20 minutes apart. We quickly became friends, and roped in anyone else we knew with a PET. However, many who had computers in 1978 were do-it-yourself-ers with no interest in forming a group. Even today, my chats with the first PET owner I knew are enjoyable but rare, he's only been to 1 public CIPUG meeting, and he doesn't read Midnite.

The Midnite was founded one day 3 years ago when JO and I agreed that Compute! had lost some vital aspects of Len Lindsay's "PET Gazette" when they took it over. We decided to each put up a hundred dollars and see if we couldn't carry on Len's work. As you can see, the gambit worked, and we never quite used up the original investment. When CIPUG became an official monthly organization with meetings, we could no longer handle the workload of a free quarterly magazine and meet the public's demand for monthly or bimonthly issues plus meetings. Therefore, we incorporated the Midnite separately as Midnite Software, Inc., and turned it into the publication you are now reading, for $20/year.

Footnote: Occasionally we get letters from user groups asking how on earth CIPUG manages to do so much, and lamenting their own inability to do anything important, due to only having 50 or so members. These letters were enormously humorous to the half dozen of us who actually made up the working core of CIPUG for 3 years. But we couldn't tell anyone we only had a half dozen active members, so we didn't. We finally found a cooperative dealer and went public in August of 1982. Within two months we had 25 at each meeting and an overall list of 100 or so, just by being around when VIC and 64 sales took off. Then this past winter we became an umbrella group, encouraging each town in Central Illinois to develop a separate sub-group. This they did, and now some of our sub-groups are larger than the original group. Last fall we also moved, and helped start a Lincoln sub-group, which is smaller than some, but still fun.

In each of our subgroup towns, there are a half dozen people who want a computer club, and do the necessary work to make it happen. Once you have them, even a club of 6 can reach important goals. Every three months, we schedule our CIPUG meeting in one of the towns to show off something important--like special people and new prototype equipment or outstanding programs. The librarians also share their libraries with each other and with CIPUG librarian, Brent Anderson.

Moral: don't let small size or other handicap keep your club from tackling that great idea. Decide what you can do that is unique and do it!-JS

VIC 20 Notes

FOXFIRE SYSTEMS, in co-operation with CHUG, has announced VIC MICROMON 1.2, by Russ Bennett - an improved version of VIC MICROMON, by Bill Yee, Compute!, November 1982. Works with tape or disk, can be used to burn both 2516/2532 and 2716/2732 EPROMS. The best VIC machine language monitor around. Send $4 U.S. copy fee to CHUG: VU001, c/o Fox 20, Box 507, Deer Park TX 77536.-Hardcopy

DR. WATSON COMPUTER LEARNING SERIES:

VIC 20 users interested in assembly language programming are lucky to have Dr. Watson Computer Learning Series, Beginners Assembly Language Programming, VIC 20 by Dr. P. Holmes, published by Glentop Publishers Ltd, London. Save a trip to London; buy it from M.M.I. at 1511 Bingle, Houston TX (713/467-0466),... for $19.95 plus tax.-Hardcopy

Want Ads and Answers

WANTED: A simple accounts payable program

...for personal use to run either on a 8K VIC 20 or a 64, to track about 20 to 30 vendors, be able to update balances based on new charges and payments, to run on disc, and be simple for a novice like me to use? Please make recommendations.-Gerald Troy, O.D.

REPLY: An abbreviated version of B. Prouty's eZZeBOOKS and eZZePAYROLL program runs on the 64 with 1541. (See her current ad.) The PET version was reviewed in M/P#10 under its former title, DATABOOKS and DATAPAYROLL.-ES

WANTED: a CBM 8096-usable free-form, keyword-based, no fields, no format, no set-up information filing and retrieval **database** like FYI 12000 Superfile?-Reinhold Aman

REPLY: Someone advertised one once for CP/M (that is, ZRAM) that worked on WORDSTAR files, but I've not seen it reviewed anywhere. Anyone know where to get it or another one that does what Dr. Aman needs?-JS

WANTED: Good Word processor for the 64/1541 and Epson MX-80

I have a 64 with 1541 Drive and Epson MX80 with CARD? interface. I need a word processing program for under $150 with: block move, block delete, block copy, block merge from a file, 40/80 column choice, word wrap, recover last command, and automatic reformatting after editing. I would like multicolumn capability, cursor to end of paragraph, cursor to end of page, slow scrolling, fast scrolling, page-by-page scrolling, on-screen formatting, a status line, and a ruler line (a la WORDSTAR). I don't need proportional print or right justification.-Nino Maida, 211 Brighton, San Francisco CA 94112

REPLY: Your best bet sounds like EASY SCRIPT from Commodore for $100. PAPER CLIP 64 may be as good (I'm still testing it), and WORDPRO may be enhanced for the 64 someday. EASY SCRIPT won't have word wrap on entry like WORDCRAFT, but I consider that feature more trouble than it's worth. However, if you really want that feature, WORD STAR will eventually be available to you via Commodore's CP/M card for the 64. Software developers, feel free to borrow from the above wish list in designing the next generation of word processing programs.-JS

WANTED: 64 Terminal program

You noted that a version of Steve Punter's terminal program for the 64 is now available. One on a TPUG disk has an upload-download function that doesn't work. Is one that works really available? If so, where?-Sheldon Leemon

REPLY: I have the 64 terminal program you requested on our terminal disk. This version's upload and download do work, according to JO. To get it, send our usual copying fee of $15 to 1238 Richland Av., Lincoln IL 62656.-JS

WANTED: Software for setting up a bulletin board system. Also, a program to automatically download a disk to tape on a VIC or 64.-Bernie Worby

REPLY: Contact Steve Punter at 416/624-5431. His BB package is the only one around for Commodore. He is reportedly working on a 64 version (a difficult project). Meanwhile, you'll need an 8032 and an 8050, plus an IEEE modem adapted for auto-answer. As for the disk to tape utility, one for BASIC 2 was on a TPUG diskette awhile ago. Converting it for the 64 should be possible if you can still get a copy and know machine language.-JS

(Bernie is also looking for programs to sell. Contact him at Comsoft, Box 273, Belibrook OH 45305.)

WANTED: A stock control system

A stock control system which could be used on a CBM 8096 with hard disk, to

manage a 20,000 unit stock of footwear in complex ranges, distinguished by sex, brands, last, color, style, sizes from 1 to 17, widths from AAAA to EEEE, and cost. If possible, it should employ a bar code system of identification.-John Gilmour, 1187 Glenhuntly Rd., Glenhuntly, VIC 3163, AUSTRALIA.

REPLY: Your best choices are probably either SILICON OFFICE or THE ADMINISTRATOR, both from England. Your nearest dealer should be able to buy either of these well-known packages. To get the bar code reader, look for a Tandy model 100 portable computer for data entry. It has a bar code reader built-in, and can probably be suitably interfaced with SILICON OFFICE via the phone. Has anyone done a shoe store package yet?-JS

WANTED: VIC plus VICMODEM program using Baudot code for the deaf

I ...was wondering if there is a program and/or any hardware available to allow the VIC and VICMODEM to communicate via the standard Baudot code used by the deaf. Byte printed an article in January 1982, "An Apple Talks with the Deaf", but I don't know enough to make it work on my VIC.-Webb V. Turner Jr., 1115 Larry Dr., Las Cruces NM 88001

REPLY: I think you mainly need to translate characters on the way to and from your VIC. A simple modem program in Chapter 7 of our PET Personal Computer Guide illustrates the method. It sets up two 256 element arrays and at each spot in the array stores the correct ASCII code to substitute if that number is needed. Thus, instead of saying PRINT#2, CHR$(65); you would say PRINT#2, OUT$(65), which might or might not contain a 65.

There is a Commodore users group for the handicapped, called the Delmarva Computer Club. They write an occasional article for Compute or Commodore magazine, but I have no other info on them. Does anyone have their address?-JS

WANTED: More video monitor reviews for the VIC and 64-Eddie Anderson

REPLY: The two best color monitors we've seen are the Panasonic "Omni" series reviewed in M/P #10 & 12 and the new Commodore monitor reviewed this time. An Amdek JO had in his store for a while was too deep front-to-back for my taste, and had an indifferent picture; not much better than an ordinary TV. KRP reviewed a Comrex monochrome monitor very favorably last issue. When using a Sony industrial color monitor for book photos last week, the picture was no better than the Panasonic. Reader reviews of others are quite welcome.-JS

WANTED: I'd like to hook up my 8032 to a large-screen TV. Possible?-Reinhold Aman, 331 S. Greenfield Av., Waukesha WI 53186

REPLY: Madison (WI) Computers has a video adapter that may work. The problem will be finding a TV with sufficient bandwidth to display 80 columns.-JS

FOUND: PET joystick interface

Some time ago, a reader requested a joystick interface for PET. J Systems Corp., 1 Edmund Place, Ann Arbor MI 48103, offers one for $70 that hooks to the user port, allows "hi-resolution digitization", and includes software.

Used

WANTED TO BUY: Commodore 2022 Printer

Dan Kapsch, 1850 Gebhart Church Rd., Miamisburg OH 45342 (513/866-0120).

WANTED TO BUY: Commodore 4040 dual disk drive

Foxfire Systems, Inc., 3811 Newton, Pasadena TX 77503 (713/473-6723).

FOR SALE: Commodore compatible Texas Instruments 810 Printer

Six months old, mint condition. 150 cps., bi-directional, logic seeking, upper/lower case, 136 columns. RS-232 or parallel interface. $1900 list; asking $950 or best offer.-Ross Garber, 14 Hillside, Suffern NY (914/354-7439 eve)

CBM/PET REVIEWS

Book Reviews

WORDPROCESSING; A STUDENT WORKBOOK Update, from Galt's Educational Computer Consultants. Requires 16K PET, cassette or disk, CBM printer + PAPERMATE.

COMPANY RESPONSE: We feel your review in the April/May issue of the Midnite/PAPER failed to realize why this book was written - to aide elementary teachers who were already familiar with PAPERMATE and who wanted to add wordprocessing to their curriculum, not to replace the manual which comes with the program. Teachers have many commercially prepared books of ditto masters for their courses and no one faults a teacher for using them. With this book a teacher may concentrate on supplementing assignments and not the clerical duties in creating a curriculm in the first place. For $7.50, this workbook is a life saver for a school, as every page of this book may be reproduced with the author's blessing. The assignments and examples were suggested by 5,6,7 and 8th grade students as being of general interest to all students. This workbook will work with a single PET or a networked class.-Lori Galt

UPDATE #1: We have been teaching our seventh and eighth grade students "Computer Literacy" during the past year and when Lori brought us her workbook to try out, we were very pleased with both the way it was presented and the types of assignments given. The children have done well with it. We suggested several revisions to the workbook, which Lori has kindly considered and for the most part, accepted in the current version. I realize the children probably could have figured out how to run the program using the documentation provided; however, having tried to figure out a great deal of computer "documentation" in the past two and one-half years, it is refreshing to find something that takes the reader step by step. Face it...documentation is not usually written to be understood.-John H. Clark, Principal

UPDATE #2: With these workbooks, students can work on the assignments on their own with very little teacher assistance. When they tried doing this with the original documentation, it was drastic. I am not loaded with lots of free time to assemble material, which someone else has already taken the time to document. My time is premium, and I wish to thank Lori for putting out this workbook which I have found most valuable.-Marcia Sawzak

Business Reviews

Accounting Packages

EXPANSION PACKAGE FOR THE BPI GENERAL LEDGER, $295 from RTC. Both BPI ROM and DOS protected. Requires 8032 and 8050.

This package corrects the major weakness of the BPI GENERAL LEDGER (a weakness shared by most such G/L's.) Normally, BPI erases all its detail data at

the end of each month. The expansion package retains this data, and allows you to save it up all year. You can also get a report on transactions for any account(s) for the whole year. I was quite impressed with this product at the March dealer's show in Chicago, and also got a very favorable report on it from BPI's people at the TPUG copyfest last week. Although my review copy lacks a manual, the product is usable without it. If you use BPI's GENERAL LEDGER (and many of you should), you also need the RTC EXPANSION PACKAGE. Recommended.-JS

MAGIS PLUS, $2000(?) from Management Accountability Group. Disk protected. PETSPEED-compiled BASIC. Needs 80 columns, 8050 and printer. ANTI-WARRANTY.

Designed for wholesale and retail businesses, or other applications. Includes system diskette, data diskette and manual, but no backup program diskettes in case of failure, damage or normal wear--a serious drawback. The manual is complete and reasonably well written; also provides adequate screen prompts for beginners to operate. All printouts use forms from a Georgia based firm, to spare customers the expense of buying customized paper goods. However, authors will customize the program (at an undisclosed price) for special paper goods or features. Menus include Sales, Expenses, Accounts Receivable, Accounts Payable, Inventory, General Ledger, Payroll, Data Backup and System Instructions. A real time saver; lets you go directly from one menu to another without reloading Main Menu, similar to BPI's more automated preselection idea. Runs trial balances and has a variety of reports to evaluate your present situation. Prints checks and labels for Accounts Payable and Payroll. Inventory reports can show if stock levels fall below a specified percentage. Can evaluate performance of various departments within a business. In short, it combines accounting with the ability to analyze problem areas and identify faulty procedures, although it cannot identify items important in larger operations like union contract costs. Being a "Turn Key" program is its strongest point. The system requires little knowledge of computers or accounting practices, and minimal training of clerical staff. It's extremely forgiving and "bug-free"; "Old Ham Fist" could not persuade it to misbehave once. Compared to BEC, BPI or MASTER, I prefer MAGIS+, with these reservations: 1) its high price compared with BPI's price and capabilities; 2) and its Lack of Warranty reassurance and system backup diskettes. Otherwise, MAGIS+ is a highly detailed and complete package. Highly recommended.-JPD

TIME ACCOUNTANT, $400 from Image Software. Time billing package. Requires 8032, 8050 and ASCII printer. PETSPEED-compiled BASIC. Dongle-protected.

Test version will hold up to 500 clients, while the marketed version uses the DTL compiler and will hold 800 clients. Includes two diskettes (a Master disk and a Transaction disk), a 48-page manual, and a run-time key which must be placed on the first cassette port for the program to run properly.

Is this package 1) easy to learn and use, and 2) flexible enough for individual user needs? Yes, TIME ACCOUNTANT receives an A+ in both categories. The manual is concise, well documented, thorough, organized and easy to read. Though written for people with a limited computer knowledge and experience, it would not bore people with some computer competency. TIME ACCOUNTANT is a powerful menu driven and flexible time accounting and billing package, containing many features and options to fit the user's needs. It is worth every penny, if your needs are time management and accounting, and it comes with a 30-day refund policy if it does not suit your needs.-TZ

Printers

GEMINI-1Ø PRINTER, $35Ø-42Ø from many dealers. Dot matrix printer.

This printer is an excellent buy. I would suggest using it with Cardco'S CARD? parallel interface ($5Ø-$8Ø). It connects the printer to the serial port, which simplifies I/O greatly and guarantees that any software requiring a serial printer will work properly. This printer is a carbon copy of the EPSON MX-8Ø and appears to be well-built.-Harold Miller

SEIKO GX1ØØ PRINTER (BANANA), $249-395 from Leading Edge. Dot matrix printer. 5Ø+ cps. Centronics compatible parallel input. Optional interface.

REVIEW #1: To call this a stripped-down printer is giving it too much credit. It's a VIC 1525/Panasonic/Seikosha clone, with user-definable characters, ability to repeat graphics or data patterns, double width characters and dot addressable graphics: its positive points. Here are the problems: It's sooooo slooowww (3Ø cps), has no underline ability, no true descenders, no line feed, must have a Centronics parallel interface to be used with the 64 or VIC, and will only use flimsy #15 paper. I use an MW-3Ø2 parallel/serial interface by Micro-World Electronics, which needs a lot of dip-switching to get certain characters to pass to the printer. There are a lot of better and cheaper printers available now for the 64 and VIC. My advice is to pass on this one.-Rich Westerman

REVIEW #2: Produced by Seiko of Japan and finished to meet the requested specs of the marketing company. Optional interface has two components: a $25 cable prints standard ASCII character set (using a program in the manual), and a $3Ø plug-in cartridge prints the Commodore character set, when used with the cable). I haven't used the cartridge, but manufacturer says it works.-FD

SELECTONE TYPEWRITER, $695 from Selectone. For any computer with a Centronics parallel interface. $195 for kit without typewriter.

An Olivetti Praxis 3Ø typewriter, modified to interface to a computer. Modifications are entirely hidden inside the typewriter, with only a 1Ø-conductor cable peeking out the rear cooling vents. Though not tested, instructions for installing kit seemed simple enough for people familiar with electronics kits.

Fairly compact and lightweight, but still a full KSR daisywheel printer. Includes a liftoff ribbon self corrector with 1Ø character memory, and extra characters for other languages. For $5Ø extra, you may substitute the PRAXIS 35, adding dual pitch and a bit more memory. The heavier-duty PRAXIS 4Ø is also available. As a typewriter, the SELECTONE performs somewhere between my old electric Smith Corona and an old IBM Selectric. In features, it outdoes both, though a new SELECTRIC would outclass it - for triple the price.

As a computer printer, it is entirely functional, though slow (6 cps net) - about 1/1Øth the speed of our C.ITOH PRINTMA STER, but quality is nearly identical. Back-spacing and underlining are supported, but I haven't gotten bold face yet from WORDPRO/64. As mentioned in its review, WORD WIZARD changes everything to lower-case. Ribbons last 4Ø,ØØØ characters - about 1/5th as long as on larger daisywheels, and cost nearly as much. Print wheels are available in the usual array of typefaces, but no easier to change than on other daisy's. An excellent choice if you need a good low-cost typewriter/printer.-JS

Interfaces

TYMAC UNIVERSAL TAPE INTERFACE, $50 from Micro-Ware Distributing Inc. Cassette interface for all Commodore computers. Implied warranty.

REVIEW #1: The Cadillac of PET cassette interfaces! Costs more, and does more, than Cardco's CARDETTE (see separate review.) Like its competitor, it easily loads and saves programs in Commodore format on ordinary cassette recorders. But TYMAC's unit also solves the infamous parity problem between early and recent DATASETTES, with a parity switch. There are 3 LED function indicators, for motor-on, read, and write, plus a satisfying snap from a relay whenever a file is found or a load or save is completed. Its most unique feature is that it can directly duplicate files from one cassette to another WITHOUT loading into the computer -- perfect for your poor overworked cassette librarian and the person with large free-format data files. On the negative side, this plus a cassette is bulkier than a DATASETTE, has more cables and needs playback volume adjusted. Even so, it's a stellar product. Highly recommended.-JS

REVIEW #2: While not all cassette recorders seem to work, my two Sony portable AM/FM cassette players work fine. A friend couldn't get the duplication feature to work. Perhaps the trouble was the meager instructions; they even had a typo in them. About two weeks later, I received more instructions clarifying the duplication feature. A unique product. Recommended.-Ken Burch

Other Equipment

TRS-80 LINE FILTER, $50 from Radio Shack. For all computers.

A high-priced multiple outlet extension cord for computers. Electronic and hardware stores sell similar units for as little as $10. The extra $40 buys: a cord that doesn't fall apart, 8 plugs instead of 6, a lighted switch in some units, surge suppression to help protect against cooking your computer after a nearby lightning strike, and line filtering to keep your system from interfering with or being interfered with by other electronic devices. The last two features add most of the cost, but their value is hard to judge without a lab, as is the fact that the unit includes 3 separate sections electronically isolated from each other. I like having the outlets on a different face of the unit than the switch. This lets me mount it on the wall without having to reach through a mound of cords to reach the switch.

Radio Shack also makes an even fancier model (untested) that turns parts of the system on in the correct order. This might be needed for 64 and VIC owners with multiple disk drives, but not for other Commodore systems. Recommended primarily for its convenience; if it provides protection, so much the better.-JS

BRANDING IRON Update EPROM burner.

My eprom burner is a BRANDING IRON which worked fine with BASIC 3.0, but would not work with BASIC 4.0. I wrote to K-Z Systems advising them of such. Got a nice letter back, and a new tape which still did not work with my computer. After advising them of this, did not get any answer. After re-writing ROM 3.0 for 4.0, it works with no problems. First it moved the code 1 byte ahead. You may have others with the same problem.-Don R. Lash

Magazine Reviews

COMMANDER Update, $2/year. Monthly, from Micro Systems Specialties.

Geared to PET, VIC, 64 users exclusively. Past issues have had an excellent machine language tutorial for the VIC 20. As with any magazine except Midnite, I wouldn't trust their software reviews. I get the feeling that if I were spending advertising bucks in their pages and sent them a blank disk to review, they'd find something nice to say about it (a la Compute!). A little too much space devoted to new product reviews (company propaganda). The articles make it very worthwhile, and it shows a lot of promise as a valuable resource.-BMD

ICPUG NEWSLETTER, $20 pounds/year airmail. Bi-monthly from Independent Commodore Products Users Group (England).

Very nice bi-monthly magazine, with the sort of useful and clearly written information that makes the Transactor great. The 3/83 issue has 100 pages, 5 inches by 8 inches. Nice size to hold and read. Very readable print. Gem 1: 9 pages mapping VIC and 64 ROMs in relation to PET BASIC 2/3. Gem 2: In DOS2.1, Bit 6 of a file type code in a file's directory entry is used as a file locking bit and any file with bit 6=1 cannot be scratched . The directory entry appears with a "<"following the file type.-BA

Modem Reviews

SIGNALMAN MARK IV MODEM, $127 from AB Computers. A new modem for PET/CBM computers series with BASIC 2 or 4.

Probably the least expensive modem you can buy for PET. It comes with a ribbon cable connector to plug into the parallel user port and [two] modem driver programs on cassette, one BASIC and one machine code. The BASIC program takes care of PET to ASCII conversion; it's easy to add extra functions (I programmed my HOME key to send ESC). The software even has a[n undocumented] routine for sending control sequences. It must plug in between the handset and base of a modular telephone unit. Highly recommended.-Sam Adams (Hardcopy)

Intelligent Software for the Commodore computers

Catalog 5/1/83

My line of programs (such as it is) consists of the following products. All are written for Commodore computers; any of my programs will load and run without modification in the entire line (including older PET's).

1. Word Processor; $25. It includes the following features: VERY fast file routines, including a disk file catalog; automatic form handling on tractor- or friction-feed printers; fully imbedded margin, justification, spacing, formatting, and paging controls; block commands and error-trapping in editing mode; and a spool routine (formatted output to disk for later mass printing). I believe W/P is the most thoroughly tested, user-oriented word processor available at this time at anywhere near the price. for any machine. Requires a minimum of 10k of memory (8k expansion on VIC), and a printer.

2. Copycalc; $20 ($15 if ordered with another program). Copycalc is a simplified version of the "electronic spreadsheets" that are becoming extremely popular for use on personal computers. It allows the user to set up a visible grid of numbers on the screen, and use the screen-editor to make changes in the grid, with the totals reflecting the changes. Requires 6k RAM (3k expansion on VIC); smaller version available for unexpanded VIC.

3. Baseball Manager; $30. This program maintains complete batting statistics for a baseball or softball league of up to 250 players. It generates reports on a player, team, or the entire league (including standings). It requires a minimum 10k of RAM; a printer is suggested but not required.

4. Inventory; $30. A general-purpose perpetual inventory control program. It produces a variety of reports, including order forms; multiple vendors are supported. Requires 10k of RAM; a printer is suggested.

All programs: support cassette and disk files and the CBM printers (easily modifiable to other printers), come on cassette, and include documentation. Prices include shipping; Calif. residents add 6%. All programs are copyrighted by the author; those rights will be enforced. Programs available from:

William Robbins, Box 3745, San Rafael, CA 94912

Science Reviews

MINI-COUNT V1.Ø, $17-25 from Optimized Data Systems.

A software frequency counter for PET, made to measure the frequency of TTL compatible signals presented to the input pins of the user port. Inputs prefer to see square waves and not linear or sloping signals. Therefore, some form of buffering and squaring circuits are needed to improve accuracy. The PET's internal clock is crystal driven; however, that alone doesn't make it accurate, just stable. Some adjustment [and] compensation circuitry is necessary to keep it accurate (with temperature changes). The VIC isn't designed to have a very accurate clock, but it has the adjustment to produce an accurate 3.58MHz color subcarrier. The PET is even less accurate; variances in the TI or TI$ functions from PET to PET can span up to plus or minus 5 percent.

With all the work which has gone into the software, the hardware cannot support it. [It needs] an optional high accuracy, temperature compensated crystal oscillator to replace the PET's original crystal to become the laboratory instrument the author intended. Add a signal conditioning module to the input [and a way to store] screen [information] to disk, tape or printer and it would rival the $3ØØØ counter packages used in laboratories. [Without it] this program is little more than the cheap hand-held frequency counters for under $5Ø.

When I look only at the $2Ø cost of the program and don't expect more than simple frequency measurements to augment readings from my bench oscilloscope, the program becomes more attractive. It would either delay or preclude a $5Ø to $5ØØ investment for a dedicated counter, especially if I could save a tabulation of the results. At that point, I would definitely upgrade the clock accuracy of my PET and use this program.-Hank Mroczkowski (Hardcopy)

Utility Reviews

SIM 65Ø2, $5 from Robert Baker. For 2ØØ1 and 8Ø32.

An excellent development and debugging tool for 65Ø2 machine language programming. Program simulates a 65Ø2 system using relative records to contain the simulated memory locations and is quite fast for a BASIC program. Only lacks output to printer for disassembly. Allows disassembly, trace, execute single instructions, display memory, set breaks, go, hunt, view video ram and others. In BASIC, for easy modification as desired. Main variables identified in documentation. This program would complement both the novice and experienced programmer. Another typical Bob Baker program - inexpensive but highly useful. Highly recommended.-JK

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COMMODORE 64 REVIEWS

Commodore 64 Business Reviews

Accounting Packages

PERSONAL FINANCE ASSISTANT, $60 from Rainbow Computer.
Beautifully packaged, very well documented. Those who are using PFA seem very pleased with it. Thorough review next time.-BMD

Data Base Managers and Mail Lists

EQUIP, $13 cassette on CURSOR 64-3 from Code Works. Inventory.
Pluses: Can store information about any equipment on disk file or cassette file. Could be changed so fields were of your choice. Old files can be changed or added to, then resaved under same name. Minuses: I needed a card with name of files, because if you read an old file, you need the name and to get the directory off the disk, it wipes out your program. Each file only holds 12 records. A good program - could be used for several things.-NR

FILING ASSISTANT/WRITER'S ASSISTANT, $125 from Rainbow Computer.
Haven't had time for an in-depth look yet. This much I can say: documentation is excellent, geared to a novice, and company is very supportive. Rainbow says PERSONAL FINANCE ASSISTANT and this program will merge with an upcoming release, SPREADSHEET ASSISTANT. If true, and the programs are as good as their documentation, they should have a winner. Thorough review next time.-BMD

64 MAIL LIST, $30 cassette or $35 diskette from Data Equipment Supply.
A respectable mailing list if you don't need any categorization. Holds 250 names per file. It will create files that are compatible with WORDPRO 3+/64. Can merge files, sort by any field of address data, or by zip code or area code. In zip sort you can specify any range; in area code sort it selects the code you specify. Entry and housekeeping functions easy to use. If some means of classifying the names besides address data were included, this would be a much better program.-LW

Electronic Spread Sheets

CALC RESULT, $135 cartridge and diskette from Computer Marketing or Handic Software AB. Printer optional. Anti-warranty.
REVIEW #1: Commodore 64 version of program reviewed in M/P #12. A very versatile VISICALC type program. Offers 63 columns and 254 rows per page, with 32 page capacity. Has nice split screens and windows, plus enough other functions to keep you busy figuring out what you can do for a long time. Manual is well designed and presented, although obviously written by someone for whom English is a poor second language. Manual has a few errors. I certainly hope they know what they are doing! Highly Recommended.-LW

REVIEW #2: VISICALC perfected - almost. Nearly everything I found inconvenient in VISICALC has been corrected, with dozens of new features added in this new Commodore-only program. NEW IDEAS: allows 3-dimensional spreadsheets up to 32 pages in size, views up to 4 at once, and consolidates data from several pages; has built-in HELP screen, write-protecting formulas, storable printer formats, IF-THEN-ELSE, multiple column widths, screenprint, FULL use of color, and a choice of several languages. IMPROVED IDEAS: leaves row and column numbers out of printouts, cursor edits inputs, uses function keys well, uses HOME key to go to top-of-screen and page (as in WORDPRO), has vastly larger workspace, much faster loading of data, and better looking graphs.

CR was obviously designed to use many of the same functions as VISICALC, retaining most of the same control keys, and supposedly reads VISICALC files. Compared to VISICALC, the only disadvantage I found was the inability to set a protected horizontal title. Vertical titles in CR are also unprotected, but stable, and may have a different column width from the rest of the page.

A red sheet points out the most notable fault in CR--it won't start at all unless you leave the drive door open until you hear the drive head 'thump' on its bumper when loading the master diskette. Another fault is that the startup text is nearly unreadable, because both the help screen and normal background you get when you hit RETURN is yellow. Just follow the manual to select another color using the global format command. The manual mentions a dual drive, but not whether it will work with IEEE interfaces. Without an expansion motherboard, I couldn't test that.

The manual is shorter and easier reading than VISICALC's, but not perfect. It could use: an index, a prominent summary sheet of commands on the last page, and a small job aid listing the uses of the function keys. I attached my own command summary to the cartridge itself. I still have much to learn about CALC RESULT in the months ahead. I can't compare it to BUSICALC, a fine and cheaper spreadsheet reviewed by JO in M/P#12, because I've not seen it. Based on what I have seen, CALC RESULT is a great program. Definitely recommended.-JS

Word Processors

BUSIWRITER WORD PROCESSOR PROGRAM, $99 diskette from Skyles Electric Works. Machine language. Requires 64, 1541/4040 disk drive, and printer. Foreign DOS Protected. No warranty, but will replace defective diskette for $10.

Supports a wide range of printers (VIC 1525/CBM printers, Epson MX80/100/FX80, Qume/Diablo/Starwriter, Spinwriter, Qume/Diable, ASCII printers). Compatible with EASYSCRIPT, WORDPRO, or SUPERSCRIPT by omitting page range prompts when merging documents. Also compatible with MICROSCRIPT and WORDCRAFT by using "M" or "C" on page range prompts. (Removes all WORDCRAFT embedded controls.)

SPECIAL FEATURES: Global/fill, Merge (from disk or work page); Find and Replace/multiple replace phrase or by printed page number; Change color (text, backround, border), Displays characters free in document; Move cursor to next/previous/specific page, to next/previous screen, or to next TAB or opposite end of line, insert, delete, copy, or move text; rename, save or print document; override page width, auto-indent, TAB, numerical TAB, center- or underline; sub- and superscript, emboldening; send ASCII code (for ASCII printers); disk commands.

PLUSES: Excellent manual, with an invaluable quick reference guide and detailed explanations of various functions and how to use them. I was writing and saving documents after less than 1 hour of reading the manual and playing with the program. Good explanations of various functions. I really liked the color control; any of the three colors (text, backround, border) can be changed and saved to disk with the document. Also of interest to small businesses and church groups is the merge letter/merge label feature, which allows a list of names and addresses to be merged into a form letter or onto mailing labels.

MINUSES: The only thing I didn't like was the drive initialization procedure which clears the drive buffers. You don't close the drive door until after you insert the program, type 'Open 1,8,15,"I"' and press RETURN. I had trouble getting it closed quickly enough, but eventually got used to it.

I have never used a word processor before. However, once I got it home and started using it, I couldn't have been more pleased. I retyped a couple of assignments I had already turned in for school, and Lo and Behold! They looked just like I had typed them originally, except! no whiteout. This is a VERY user friendly program with logical and well thought out commands and features found on systems and programs costing much more.-Rick Axley

EASY SCRIPT, $100 from Commodore.

I have found it very nice to use. It has most of the advantages of WORDPRO 4, with the exception of adding columns of numbers. It does have horizontal scrolling. You can write with just forty columns for easy editing, or specify up to 240 columns and it will horizontally scroll while you are composing. Sets printed line length independently. Then use screen view mode (with horizontal scrolling) to check it before printing. Line and column counters tell you where you are. All the other goodies are present, including fill files, block transfer, repeat and save, search and replace, headers and footers. Excellent, well arranged and nicely paced manual (obviously written in England). Other extra commands include Goto for rapid access of various parts of the text, and screen by screen display of the text as well as panning. Touch the control key to change background and text color.-JAS

PAPERCLIP 64, $125 from Batteries Included (Canada) or Computer Concept (USA). Needs disk drive. ROM chip dongle protection. One year warranty.

REVIEW #1: Can do everything that the original PET/CBM version can do (see review in **M/P#11**, and in some ways is easier. The main differences come from the 64's keyboard layout; most make the 64 version easier to use. For instance, the CTRL key is used as Control, rather than using the OFF/RVS key. The COMMODORE key toggles insert mode, instead of SHIFT and OFF/RVS keys. The same manual is used for both versions with the key changes (pun intended) listed in an addenda. The program will run only with the key plugged into joystick port one. The diskette can be backed up and comes with several useful printer set-up files (documentation should be available soon).

Border, background and character colors can be changed with the function keys (very useful if you're using a TV as a monitor). Horizontal scrolling can be set up to 126 columns - very useful should you ever want to load files written on an 80 column machine. According to Jim Strasma's review of PAPERCLIP for the PET/CBM, a return in the middle of a line doesn't erase the rest of that line. In the 64 version it does! This can easily be overcome by using insert mode to create a new paragraph without losing the rest of the line.

As a journalist using a $6000 stand alone word processor every day, I compared PAPERCLIP 64 and WORDPRO 3+/64 very carefully. This review was written using PAPERCLIP 64. All I need now is an 80 column board -- are you listening Data 20? The latest shipments of PAPERCLIP 64 contain two programs. One is the normal 40 column program; the other supports the 80 column board from Data 20 Corp. For those with the early 40-column only diskette, dealers will supposedly update for the cost of the diskette only ($15). PAPERCLIP 64 is an outstanding package that more than justified its extra cost over WORDPRO 3+/64.-Gordon Watson

REVIEW #2: Manual quality is good, but could be better for beginner. PLUS: It has most everything a person could want in a word processer in its price. MINUSES: My printer is a TP-1 hooked up at the parallel port, with the SMART ASCII interface, ...but PAPERCLIP 64 will not run with it in memory. Not being able to get any output, I called PAPERCLIP (5/26/83). Their reply was I had version A which wouldn't work. I asked what could be done to which they replied, "buy version B." I asked if they would trade versions with me. They replied, "For $15 and your disk we will." I then asked when this could be done, to which they replied, "When it comes out!" NO place on the box does it say RS-232 only,

and they want $15 for a trade when it comes out!-Alan Dare

TOTL.TEXT 2.6, $45 diskette from Totl.Software. Machine language.

REVIEW #1: I used the text editor for this letter and review, merely changing the Secondary Address in line 1 to a 7 to comply with CARD? interface's requirements for upper/lower case printing. Allows almost every function of the printer to be exercised with minimum problems, without any surgery to the program itself. For its price, it's fantastic!-Nathan Okun

REVIEW #2: I'll be using many different word processors and am willing to bet I won't find a better deal than this, for 45 bucks. For instance, it has compatability with a wide range of printers; text processor in BASIC (can be easily modified for your special needs); I/O routines in machine language for fast printing, loading and saving; easy scrolling up and down through text; columnar tabs; and works with 80 columns automatically. Want more? How about full margin control and justification, or block move and block delete? The processor is menu-driven so that even a novice like myself is writing fancy-looking letters within a few minutes. I wasn't happy with the colors it loaded, so I followed the very well-written manual's instructions on changing formatting and color (that more expensive word processors cannot do easily). My only problem so far is that sometimes my block-moves have a nasty habit of re-arranging themselves in spite of my instructions. In loose comparison with a friend's WORDPRO 3+/64, the only difference between the two seems to be WORDPRO's global search and edit. The TOTL people have a good reputation for providing updated versions at reduced costs, and offer good support.-Rich Westerman

Commodore 64 Compiler Reviews

PETSPEED 64 (RELEASE 2.0), $150 diskette from Small Systems Engineering. For 64 with 1541, 4040 or 8050 disk drive.

REVIEW #1: Preliminary Warning: With this version of the popular compiler for Commodore machines, you cannot compile a program bigger than 80 blocks using a 1541 (maximum program size on a 64 is about 150 blocks). It cannot use a 4040 or 8050 if the IEEE interface software uses up program space in the 64 (especially $C000). Because the Richvale new relocator program 5.1 puts the C64 LINK under the BASIC ROM ($B000), they have supposedly been able to run PETSPEED 64. Small Systems Engineering sells a $180 serial port-to-parallel (IEEE) add-on called INTERPOD that also lets PETSPEED work. I feel their advertising is misleading buyers. Joe Brown has said on Compuserve that PETSPEED 2.0 does not work at all. I will let you know.-Roy Wagner

REVIEW #2: PETSPEED works reasonably well as long as you avoid using a string of blanks in it - the string must be defined each time it is used, apparently. Also, the program has no error checking, so that, if a disk error occurs, it keeps on going and gives you a rotten compilation. I have a 99-block database program which I have used compiled on the PET, and which I wanted to use on the 64. I finally got all the ROM-dependent features fixed up (including relative file commands), and had the un-compiled version working on the 64. So, I bought my 64 PETSPEED and got rolling.

First attempt - a hangup, because I had more than 288 simple variables in my program. (I have not found this limitation mentioned in the PETSPEED manual.) I chopped out about 6 variables and things ran well through Pass 2. Suddenly, a message came on the screen that disk space was lacking and was it okay to scratch source files? I typed "y" and pressed return. The message "I/O error #2" appeared on the screen, and the compilation proceeded. About 2/3rds of the way into the third pass, the disk error light began flashing and PETSPEED just rolled merrily on its way. Finally, things just stopped. I found no files had been scratched, the disk was full, and there were 2 unclosed files on the disk.

A call to "Lisa" at Small Systems Engineering in California revealed that

there is an 80-block limit to PETSPEED on the 64; a serious problem which also was not mentioned anywhere in the AOS or PETSPEED manual. Also, a new improved version is now supposedly in the mail, which fixes some bugs in the 1.0 version I had purchased. Meanwhile, a program with only 44 blocks compiled (30+ blocks in BASIC) has also acted up. String variables are forever being clobbered during program execution - filled with garbage after one pass through the program. Ah, well... -Bill Brown

Commodore 64 Education Reviews

EASY LESSON and EASY QUIZ, $40 diskette from Commodore.

The LESSON program prompts you to set up multiple choice questions (each with up to 5 choices). You start off with Lesson Date, by whom and title, and then specify up to 7 different categories. Each question can have up to 5 lines of text, up to 5 possible answers, a reference (for example, book and page number), and be associated with up to 7 categories. Data can be changed, printed, and selected for Quizes.

The QUIZ program presents the questions in fixed or random order; with prompt sounds for right and wrong on or off, and ends with a count of right answers, time, and a chance to repeat the quiz.

Package is well done. User can change border background, and text colors. Correct answer given immediately if wrong answer entered (no retrys). Menu program displays to up 150 programs. You select program by number, that is automatically loaded and run. (The MENU program on my diskette did not work; it had a program error on line 40.) Diskette also contained DOS 5.1 wedge. Highly recommended for teachers and students needing good quiz materials.-Roy Wagner

FACEMAKER, $35 from Spinnaker.

Good graphics, fair sound. I have mixed feelings about Spinnaker's first release for the 64. It accomplishes its educational goal quite well; kids from 4-12 seem thrilled with it. You build a face by choosing eyes, ears, mouth, nose, and hair, with eight different selections for each feature. After drawing the face, the child may "program" the face to wink, smile, frown, cry, wiggle its ears, or stick out its tongue. He may also play a "Simon says" type game where the face performs and the child copies the movements. For keyboard familiarization, entertainment, and a painless intro to programming, I'd recommend it without reservation. However, I wish the authors had used the capabilties of the 64. While graphics are good, the 64 could do much better. Why not let the child choose the face shape? FACEMAKER is a solid first offering. I'm looking forward to Spinnaker's future releases, and only hope they will make better use of the 64's capabilities in upcoming offerings.-BMD

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Commodore 64 Game Reviews

ANNIHILATOR, $2Ø cassette from Victory Software Corp. Requires joystick. Protected. Machine language.

This is an almost exact replication of the popular DEFENDERS(tm) arcade game. Uses hi-res, sprite graphics, and the best sound that I have heard for the 64 yet! Your mission is to annihilate the invading aliens. Uses joystick to manuever around the screen. The landscape scrolls horizontally across the screen creating very nice graphic effects. The only thing lacking is the scanner, found on the arcade version. Very highly recommended.-Ross Garber.

APE CRAZE, $2Ø cassette/$23 diskette from Comm*Data. Protected. Requires joystick.

REVIEW #1: A DONKEY KONG take off. You jump up a screen of platforms, instead of walking up an incline. Reaching the escape hatch gives you a second screen, where you have to pull out bananas that hold the structure together while avoiding bombs. Very nice music. Particularly clever synchronization between music and screen while changing to second screen. Recommended.-LW

REVIEW #2: Not a DONKEY KONG. A character at top of a screen throws down objects while, at the bottom of the screen, you jump up on beams popping ballons. Very hard to jump and only one try per game. Catchy, but tedious tune. Frustrating; not recommended.-Roy Wagner

REVIEW #3: Favorite at our house from age 4 to 17. Music is catchy and enjoyable. Two different boards, each randomly made each time they appear, so keeps being a challenge no matter how long you play. Highly recommended.-NR

REVIEW #4: An original variation of DONKEY KONG. You must avoid the onslaught of barrels. The excellent use of music in the background of play still would not entice me to purchase the game.-JO

CENTROPODS, $2Ø cassette/$23 diskette from Comm*Data.

Very close to CENTIPEDE. Very good sound and graphics, but a little too easy. You move your man on the bottom of the screen, shooting centropods, spinning globes, and guided missiles and a random U.F.O. Try before you buy.-Bob Bures (a young man's review)

CHICKEN CHASE, by Micro-8Ø; $2Ø cassette from Nibbles and Bits, Inc. Joystick needed.

A chicken runs around in squares, instead of circles. Birds try to kill you and when the chicken squares the random picked square, a wolf starts chasing it. A lot of action and fun to play. Recommended.-NR

COLLECTION 64:C1, $1Ø cassette/diskette from Public Domain, Inc. Not protected.

This collection of programs from various contributors is a worthwhile investment for only $1Ø. Includes Checkbook utilities, several excellent adventure games, outstanding 3 part harmony music, flight simulators, Sprite Editor, Program Lister utility, and others. HIGHLY recommended. Send money order for fastest service. NOTE: Treat this tape as a master copy and transfer the programs to a high quality cassette or disk for everyday use.-Warren Gordon

COLLECTION 64: C2, $1Ø cassette/diskette from Public Domain, Inc. Not protected.

A worthwhile investment. Software includes hi-res demos, music, bar graph utility, several excellent adventure games, OTHELLO, POKER and others. Perhaps the best programs are MONOPOLE 64 (this same excellent game sold in the stores for $2Ø) and Jim Butterfield's SUPERMON64. Highly recommended.-Warren Gordon

CURSE OF RA, $2Ø from EPYX.
More data files for the TEMPLE OF APSHAI. See TEMPLE for review.-JO

CURSOR 64-1: FIFTEEN, SAFE, PIANO, $13 cassette from The Code Works. Requires joystick.
This first offering of Cursor for the 64 Includes three programs.
FIFTEEN is the old tile game I remember playing as my family traveled. You use the joystick to move the tiles around to get them into numerical order in the 4 x 4 block. Keeps track of the number of moves made, to make you feel bad or good depending on your ability.
SAFE is a safe cracking game. With the joystick you have 2 minutes to solve the 4 number combination. You get a double click and visual indication when you get a number correct, but be careful; if you go past the number, the combination resets. Some fair sound and graphics if you open the safe.
PIANO is a music program that plays some interesting music. The best part is the keyboard graphic with a moving block showing what key is being sounded. Comes with three tunes, none of which I had ever heard. You can program your own song, but the method is admittedly difficult.-LW

CURSOR 64-2: BETS, BOSWAIN, HANOI, $13 cassette from The Code Works.
This is a rather uninspiring offering of 3 games.
BETS is a gambling program that I have difficulty with, called Indian Poker, and has some fair graphics. The three opponents the computer selects for you change their expressions as the game progresses.
BOSWAIN is a stone. The write up claims this might be what DUNGEONS AND DRAGONS players dream about at night. Oh joy! What you really get is two screens of text and a guessing game to choose which hand is holding 1Ø rubies. The figure is 3 notches past barely recognizeable.
HANOI, despite the write up about priests of an ancient cult, is a version of a game called CRAZE. You have to move a stack of 3-7 disks from one peg to another, one at a time, and you can't put a larger disk on top of a smaller one. When you solve it, the computer tells you the fewest number of moves possible to solve, if you want to know. I rate this cassette - don't bother.-LW

CURSOR 64-3: MISER, EQUIP, MAD, $13 cassette from The Code Works.
EQUIP: See under Commodore 64 Business Reviews.
MAD: Fill-in-the-blank story program. Has six different stories all relating to computers. Can be funny, depending on fill-ins. If included with EQUIP and MISER it's okay, but would not recommend by itself.-NR
MISER, by Mary Jean Winter. Adventure game. My 9 year old son has been using his mind with this one. You collect treasures as you move from room to room and around the outside of the house. After several hours, he still has one treasure to find. However, once you solve and find all treasures, you won't keep playing. Still a good buy with the two other programs.-NR

CURSOR 64-5: GODZILLA-MERGE, $13 cassette from The Code Works.
MERGE: I did not use, so no comment.-NR
GODZILLA: Win by killing Godzilla. Attack by land, sea, air. A map of Japan is on the screen and Godzilla moves about. There are sound effects during different attacks. A different format game, but still war type. Didn't enjoy it that much.-NR

ESCAPE MCP, $25 cassette (or diskette) from Comm*Data. Requires joystick. Machine language.
REVIEW #1: A TRON offshoot. Must run man through several mazes while MCP chases you, using binary pursuit. You collect treasures for points, and mazes keep getting more difficult. Very hard to escape from MCP. Man gets caught on some turns. More frustrating than fun. Not recommended.-Roy Wagner
REVIEW #2: Maze game. The MCP is a funny looking M that can go through the walls as he pursues you. Just isn't up to standards of other Comm*Data games as

far as I am concerned. Unless you are a maze freak, not recommended.-LW

REVIEW #3: ESCAPE places you in a circular maze in which you try to move your man into the center for a key to open the door to yet another maze. Looks simple, but very difficult to play.-JO

FROGGER, $35 by Chuck Benson, from Sierra On-Line. Versions for 64 and VIC. Machine Language. Optional joystick. Good 90-day warranty (then $5).

REVIEW #1: I'd call this "official" FROGGER the second best computer game I've ever seen, right behind CHOPLIFTER for VIC. It's vastly better than LOGGER and ROAD TOAD (see separate review), and nearly all non-frogger type games. It has everything; and all beautifully drawn. It's very wholesome, though not exactly safe. Screen motion on the screen is constant and intricate, characters are colorful and detailed, and the continuously changing music is superb. The only drawback is its control. It allows keyboard or joystick control, but could not properly read "up" on either of my joysticks. To play the game, I had to reverse "down" and "up". As for difficulty, it has two speeds, slow and fast. This is a game the whole family can enjoy. Highly recommended.-JS

REVIEW #2: To date, the best transfer of an arcade favorite to the Commodore 64 that's available on diskette AND cassette. Manuever your frog across a busy highway onto a rushing river filled with turtles and logs. Constant action, excellent music, and colorful use of sprite graphics, make this game a MUST for the arcaders in your family. Highly recommended.-JO

REVIEW #3: Good instructions. Excellent sound (two different tunes and action sounds to avoid monotony). Music can also be turned off separately, leaving only action sounds present. Has pause control and easy rerun control. Hi-res graphics. Excellent drawings of sprite action figures (frog, crocodiles, snakes, flies, turtles). Bright vivid colors. Selectable speed. May be a little slow for some. My first game that I felt was worth the money. It had much sweat and thought put into its refinements. It's the favorite of all our games. I fear the diskette may soon wear out.-Herb Gross

GRIDRUNNER, $40 cartridge from Human Engineered Software.

Identical to the VIC 20 version (**M/P**#11), except that the 64's 40 column screen makes the game more difficult. Takes full advantage of the SID chip to produce outstanding sound effects. To reach the highest scores you may need a trackball, rather than a joystick. After Grid 7 the game gets very hectic. The best arcade game I've seen for the 64. Outstanding.-Gordon Watson

JAWBREAKER, $30 from Sierra-Vision.

An original computer game by the people who brought you FROGGER(tm) - but altered from the original version that Atari(tm) tried to sue them over for looking like PACMAN(tm). It's still a good game. You eat pieces of candy on a moving vertically-oriented maze and avoid jawbreakers. After eating one of four special candy pieces, you can chomp on jawbreakers for extra points. Clear a screen, and your teeth are brushed. Ten skill levels and EXCELLENT background music; your younger children will love it! Recommended for children under 10.-JO

JUPITER JUMPMAN, from EPYX. Requires 1541 disk and joystick. DOS protected. No warranty.

REVIEW #1: JUPITER JUMPMAN is a game of girders, ladders and ropes for a player to run and jump on while grabbing targets and avoiding anything that moves. The idea is to defuse a space station full of bombs - a fairly wholesome and life-affirming game. The only blood shed is your own. JUMPMAN's 30 different levels are hardly boring, except while waiting for the next level to load from disk. Up to 4 can play, sharing 1 joystick. Automatically records 20 top regular and bonus scores on diskette. (Unfortunately, this takes time.) Good sound, though it eventually annoyed me. Footing is important; falling eats up one of your 7 lives. Baddies to avoid include bullets that change direction in mid-flight, random robots, dropping bombs, and rolling eggs. I especially like choosing which level, and having enough "lives" to sample more than one

board per game. I've barely seen half this game yet, but if the unseen levels match those I've seen, I highly recommend it.-JS

REVIEW #2: Outstanding use of graphics and sound. Here's a game that has all I've been waiting for - beautiful graphics, catchy tunes, a complete arcade feel all the way through, thirty levels of play, eight different speeds, and five ways to play the game. In addition, the theme is relatively non-violent. The object in most levels is to collect bombs scattered about your "space station," which is a varying maze of girders and ladders. Only three levels have you destroy whatever's chasing you; the others encourage survival. Each level is completely different, not only in screen layout, but also in type of baddie chasing you, and often in objective. Critters would have to jump out of the screen and chase you around the room to impress me more than JUMPMAN. On a scale of one to ten, it's at least a ten. -Bill McDannell

LOGGER, $20 cassette from Comm*Data. Protected. Requires joystick. Machine language.

REVIEW #1: Another arcade game take off. Nicely done with very good use of sprites. Sound not used much. Looks easy, but you soon find out otherwise. Offers faster second screen with a roving bear. This is the first game my wife has showed much interest in. Recommended.-LW

REVIEW #2: Uses hi-res. A version of FROGGER for one player. Nice 3-part screen graphics before starting game. You help 3 loggers cross a busy highway, and then cross the river by jumping from log to log or barrel, and finally jump into one of five houses. After this screen, the traffic gets heavier and faster and a moving bear blocks one of the house doors. Good sound and graphics. Displays current and highest scores. Recommended.-Roy Wagner

METEOR MADNESS, $25 cassette or $30 diskette from Softplus. 1-4 players. DOS protected. No warranty.

A rock-shooting game, more like STARFIGHTER than ASTEROIDS. You aim crosshairs at approaching meteors and shoot when centered. If meteor is too close, avoid it. Meteors come in all colors, and grow from tiny dots to huge round blobs as they approach. Action gets very hectic on later boards. Good use of perspective as meteors pass. Could be addictive; I quickly got it up to the fourth board or so, but it seemed to have several more levels. I appreciated shooting at inanimate objects to save Earth, rather than threatening aliens. It's able to use either joystick "either way up"--a good approach others should use. It could use more sound and some detail on the surface of the meteors. Also, side view on third board doesn't fit scenario, but did give a welcome change of pace. Second opinion next time.-JS

MOTOR MANIA Update, $30 cassette from United Microware Industries, Inc.

A deceptively difficult car race game, with decent graphics and sound effects. Children (ages 10 and 13) found it difficult to keep the game going for any period of time, which tended to frustrate them. A pleasant alternative to space-war games. Cassette can be copied to diskette. Good, but not outstanding.-Gordon Watson

NEUTRAL ZONE, $35 cassette or diskette from Access Software. Cassette port dongle. Requires joystick. 1 or 2 players. Machine language.

REVIEW #1: A shoot-em-up space adventure. The graphics are dazzling, giving a true three-dimensional effect. Sound is very good, like you're in a bowling alley. The view from your gunnery pod is a 360 degree wrap-around panorama of space, complete with planets, asteroids, nebulae, and the mother ship, as you defend your mother ship against attacking alien spacecraft. Fast action; five levels of play; somewhat confusing scoring. If you're not a fan of the kill-or-be-killed school, rate it 8 1/2; the graphics make it worth the purchase price. If you're a fan, it's a definite 10. -Bill McDannell

REVIEW #2: You are assigned to a perimeter gunnery pad on ALPHA IV at the outer edges of the galaxy, a long range early warning station whose mission is to

detect alien intruders from other galaxies. NEUTRAL ZONE is a hi-res, fast action (5 skill levels), and arcade quality game. This 100% machine language software features smooth scrolling of the 360 degree panorama. All action is in 3-D, hi-res full color graphics with super sound effects. This game will become the 64 game of the year. Very highly recommended.-Warren Gordon

PEARL DIVER, $25 cassette from Micro-Spec LTD.

Good use of graphics with a minimum of sound. Use your joystick to maneuver your diver in a shark infested ocean to recover pearls from the jaws of clams. Nice graphics but plays too slow.-JO

ROADTOAD, by Micro-80; $20 from Nibbles and Bits. Joystick required.

Similar to LOGGER, but harder. Another area to cross before jumping logs. Has all kinds of creatures that will kill you. The little toad becomes a cross when killed. Good graphics. Recommended.-NR

ROBBERS OF THE LOST TOMB, $25-35 diskette from Timeworks. Adventure game. 90 day warranty. Joystick optional. PETSPEED-compiled BASIC.

REVIEW #1: Your adventurer is inside a pyramid in ancient Egypt in search of four lost tablets, walking around a room with numbered doors. A song is played when you move him with the joystick or keyboard. Watch out for mummies, snakes and especially flying ghosts that drop you off at different rooms. An enjoyable game, but not heavy duty.-JO

REVIEW #2: Second only to Frogger for enjoyment AND careful programming. Explore 5 levels of tombs in a pyramid, find four gold tablets and find your way back out, while avoiding bottomless pits, deadly snakes and killer mummies, as well as ghosts that carry you off. Protect yourself with knives which, if you're fast enough, can kill mummies and snakes, but have no effect on ghosts or pits. If you're lucky, you may find a Blue Stone to stop the mummies.

Graphic colors and instructions are all good, with 10 difficulty levels and moving mummy options. Action sounds are believable enough to make your back tingle. A charming Passover tune ("Dayenu") is played whenever the hero walks (meaning "It is enough for us"). A lot a work was put into this game. Has a pause as well as a save, fast and accurate joystick response, well drawn figures that move well and complex, interesting sounds. Two improvements could be made: add some wierd sounding Middle Eastern background music in the beginning as well as during exploration, and add hieroglyphics to the blank walls of the numbered rooms. If you don't have the game...get it.-Herb Gross

64 GAMBLERS PACK, diskette from Data Equipment Supply.

I have difficulty with the idea that any sort of gambling is an arcade game. Includes **Casino/Draw Poker**, **Keno**, **Blackjack**, and the only redeeming program **Mind Boggler**. The gambling programs have some fair graphics (rather blocky) and some music, usually on the title page. Sizeable sections of machine code are POKEd into memory by the program. In **Mind Boggler**, you must guess the correct number sequence. You are told how many numbers are correct and in the right location, how many are correct, but in the wrong location, and how many are incorrect. A nice program, but I can't say much for the others.-LW

TELENGARD, $24 cassette from Avalon Hill Microcomputer Games Division.

This program is a real sleeper. Most people aren't aware of the excellent quality of Avalon Hill's games. Though most do not use graphics and sound, TELENGARD is the exception, with 50 dungeon levels (each with over 4000 rooms), 10 different monsters, and 36 magical spells. You can get armor, shields, swords, gold, silver, cloaks, boots, gems, jewels, rings for all occasions - plus inns for resting and turning in your plunder, fountains of colored waters, altars, misty cubes, teleports, thrones, and safes to crack for riches. With excellent use of sprite graphics, surprising sound effects, real-time animation, game playing time from a minute to days, I'm in my element. Even though it takes a LONG time to load from cassette, I almost forgive them for protecting it from

copying. I've played many computer games in the last six years and TELENGARD rates in my top ten of BEST.-JO

TEMPLE OF APSHAI, $40 from EPYX.

Excellent Dungeon and Dragons role playing game. Within the dungeon, you are immersed into another world battling many baddies. Haggle with the innkeeper for your supplies, and you're off to plunder the riches of Apshai. Very good use of sprites, HIRES, and a little sound. As with the PET version, my only minor complaint is the slowness of redrawing your immediate area of the screen. Highly recommended.-JO

UPPER REACHES OF APSHAI, $20 from EPYX.

Continuation of the TEMPLE adventure with stronger and more numerous monsters. To do battle in this one you must have purchased and survived the main program, TEMPLE OF APSHAI. As with the Temple review, ditto.-JO

WALL STREET, $35 diskette from Timeworks. PETSPEED-compiled BASIC.

REVIEW #1: A good full stock market game. Nice graphics "ticker tape" title page also gives changes in prices at the beginning of each quarter. Includes a variety of investments and even a financial advisor that isn't always right, but always gets his fee. Also offers some high risk special investments from time to time. Some nice sound in places. Can save a game in progress on disk. Recommended.-LW

REVIEW #2: True economic simulations are few and far between. WALL STREET brings you an economic simulation that places you in the thick of buying and selling stocks. Many variables are displayed to choose from, including charting a company's stock progress. With speculative options like investing in movies, oil wells, gold mines, plus your usual stock exchange, it'll give you many hours of enjoyment.-JO

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Interfaces

CARD? Update, $8Ø from Cardco. Centronics parallel printer interface to serial bus, for all VIC's and 64's. Full warranty.

REVIEW #1: We've had more mail on the CARD? than any other popular product we've tested. Several mention one little problem or other, but go on to say how the company took care of it immediately. To test it, we bought a SELECTONE TYPEWRITER (reviewed in the previous section). Selectone had given up on a VIC and 64 version of their typewriter, after failing to interface successfully. On learning this, we sent them our CARD? Not only did it work, but Selectone placed a large order for CARD?'s to sell with their typewriter. Rather than duplicate what others have said below, I'll just add that CARD? is an excellent product, with excellent support, and an excellent price. Highly recommended.-JS

REVIEW #2: Besides the 1541, I have a VIC, a 64, and an Epson MX-8ØFT printer. I am quite happy with my CARD? interface. I have had two problems using the interface. FIRST: My original CARD? would occasionally cause the disk drive to lock up while accessing the disk during printing. I spoke to Steve at Cardco who said he had received chips with the wrong serial transfer rate. If I sent in the disfunctional one, he would return an interface that worked correctly (tested by himself). I shipped by UPS and received a new interface within the week. SECOND: The new interface and the disk drive get along very well; however, the Epson kept adding an extra line feed after each carriage return (giving double spacing with standard OPEN statements). This was no problem on my own programs, but was annoying on programs I have bought. I called Cardco again, on a Friday. Steve explained the problem lay in Cardco's practice of grounding all unused leads, including the Epson's pin 14. The next Monday I received a schematic showing the proper lead to cut. Cardco is to be commended on their prompt service and help. I highly recommend the CARD? interface.-Wayne Mathews

REVIEW #3: The interface is the last cable in any daisy-chain out of the serial port, and is set up as device number 4, switchable permanently to 5, if desired. A thin wire cable with the cassette port plug is used as a power pickoff for printers that require an external power source supplied by the computer. The cassette plug tip has an extender plug on its rear to allow normal cassette operation with the plug installed. Has the ability to switch modes of translation between the Commodore computer and the non-Commodore printer.

[By using only] a 1K ROM chip in the interface, [certain] limitations were imposed on "listings" that replace reverse-video non-printing PRINT or PRINT# statement control characters (CHR$ Ø-31 or 128-159, plus the SHIFTED SPACE at CHR$(16Ø) with a two-letter abbreviation enclosed in braces. However, my manual did not correctly show the abbreviations. [The company] indicated that manual was being corrected, however. This affects: A) All codes indicated as "not used" in the CHR$ table; B) shifted space and shifted return; C) upper case and lower case print order; D) disable and enable shifted-COMMODORE key keyboard function; E) any of the F1-F8 function keys; and F) the second set of eight color changes with the COMMODORE Key on the 64. Also, all color changes within the eight VIC/64 common colors are merely indicated by CC in braces, while the Insert and Delete functions are lumped together under ID in braces. These apply ONLY to listings, but the lack of the second set of eight colors for the 64, especially, is a distinct limitation. (I do not know what other interface manufacturers have done in this area, so I cannot compare.)-Nathan Okun

CX-64Ø1 PARALLEL PRINTER INTERFACE, $9Ø from ECX Computer Company. For 64 and VIC. No warranty in package.

Connects to computer or disk drive serial port leaving the user port free for modem, etc. Compatible with any Centronics printer interface, but needs a +5V power supply from pin 18. Epson, Smith Corona and the NEC Spinwriter do not supply this, although instructions are included on how to adapt these printers to supply the necessary power. Switchable between upper case only (for program listings, etc. -- does not translate cursor control codes), and upper/lower case for word processing. Translates PET ASCII to TRUE ASCII. The four page instruction manual is a disgrace. My copy was just that - a copy - that in places was almost unreadable, although it does contain all pertinent information. If ECX cleans up the manual, this appears to be a good product.-Gordon Watson

MICRO WORLD ELECTRONIX MODEL MW-302 INTERFACE, $120 from Micro World. Serial bus to parallel printer interface.

PREVIEW: About 4 feet of serial cable and 2 feet of parallel cable. Worked well on a WORDPRO printout to the Epson MX-80 printer. Has 4 switches with unknown functions. Proportional spacing, underlining, enhanced width, use as device 4-7, 7 or 8 bit output, flips from ASCII to PET ASCII. Has instructions for hardware modifications to various printers. Seemed fine.-JS

Monitors

CBM 1701 COLOR MONITOR, $300 from Commodore.

REVIEW #1: Has usual controls behind door on bottom of front, along with plug-in 12-13". Appears compact and squarish. No sparkles, some rainbow with white characters. As good as my Panasonic Omni color TV/monitor, with slightly larger screen.-JS

REVIEW #2: A very nice monitor. Comes with cable in the box, ready to hook-up (nice touch). We'll have to wait for the next generation of 64's to see if the CHROMA signal on the new 8 pin video DIN plug, when plugged into the CHROMA jack on the back of the 1701 MONITOR, together with the Luminence plug, actually provides a significantly improved video image. Meanwhile, the supplied cable provides a COMPOSITE video plug for a jack in the front (why the front?) of the monitor. Audio is a separate jack in the front. All video controls are concealed under an easily-accessible front panel, and they all (except volume) have a detent setting that you don't change. If I turn down the brightness, I get a very good black screen with white characters (shades of my old PET) with POKE 53280,0: POKE 53281,0 (in direct mode) followed by CONTROL/2. Will some video guru tell us how to SAFELY tap the old 64's CHROMA signal to feed this monitor. Is it worth the effort to improve an already acceptable image? I still cannot tell if the 1701's horizontal resolution is a full 320. The manual is not very technical and has fewer specifications than digital watches.-Gary Stone

Other Equipment:

E-P-ROM, $7-10 (Canadian) from Richvale Telecommunications. EPROM carrier.

A small E-P-ROM Carrier (to design your own cartridges). $7 is board only; $10 includes case. Well made, easy to use and good looking. Recommended.-JS

See reviews of the following products under CBM/PET hardware reviews;

BRANDING IRON Update. EPROM programmer.
GEMINI-10 PRINTER, $350-420 from many dealers. Dot matrix printer.
SEIKO GX100 PRINTER (BANANA), $249 from Leading Edge. Dot matrix.
SELECTONE TYPEWRITER, $695 from Selectone. Olivetti Praxis daisy-wheel electronic typewriter with Centronics parallel interface.
TYMAC UNIVERSAL TAPE INTERFACE, $50 from Micro-Ware Distributing Inc.
TRS-80 LINE FILTER, $50 from Radio Shack.

Commodore 64 Modem Reviews

AUTO-TERM 64 Preview, from C.E.M. Needs disk. Price and warranty unknown.
A nice autodialer attachment for the VICMODEM. Hooks to cassette port without feed-through for cassette drive. Software is a revision of Steve Punter's TERMINAL program. Works well as a dialer, and I understand plans are underway to let it auto-answer as well. Tested prototype was well made.-JS

Commodore 64 Music Reviews

SYNTHY-64, by Roy Wainwright; $30 from Abacus.
REVIEW #1: Another addition to BASIC to make music programming easier. Includes TRACE function to allow you to view all music registers as music is being played. I may have encountered a bug, but Abacus says no one else has reported the problem. On at least 3 copies of SYNTHY-64, a volume setting of 8 shuts almost all sound off. Aside from that, I highly recommend it.-BMD
REVIEW #2: An entirely new language; surprisingly simple, yet very complete, easy and fun to use. Allows stanza repeats using brackets. Uses only one time signature (4/4), but tempo (T) command [changes it]. Doesn't use measures for composing music. Ties two notes together with backarrow. Its most exciting feature is three-voice mode. "+", "-" and British Pound sign indicate which voice is to play which note. Lets you print to the screen, input information, and offers five user callable instruments. Has easy setting of waveforms, AD/SR, and other features not in the users manual, such as ring modulators and resonance registers. My only disappointment: I could find no way to set the low pulse for the variable pulse wareform; only the high pulse. I STRONGLY recommend SYNTHY-64 to all 64 owners. VERY good instruction manual.-Bill Cook (Hardcopy)

Commodore 64 Science Reviews

MINI-COUNT V1.0, from Optimized Data Systems.
See review under CBM/PET Science Reviews.

MULTILAB, $239 from Metaresearch. Scientific instrument controller. Includes software, documentation, card, cable, and external manual-prototyping board.
Users can add a single card to VIC 20 or Commodore 64 computers to get a number of software-controlled instruments [for intelligent test equipment and automated process control]. MULTILAB can mimic a multi-channel oscilloscope with a bandwidth of up to 100 Hz, a frequency synthesizer, audio function generator, autoranging voltmeters, ohmmeters, impedance bridges, and four-channel, 10-bit analog-to-digital and digital-to-analog converters with sample-and-hold options.
MULTILAB building blocks [to control instrumentation functions] include a function generator, voltage-reference block, 10-bit d-a converter, latched TTL output block, precision comparator, analog multiplexer, and auxiliary amplifier. The block inputs and outputs are presented at a 40-line connector, taken through a flat cable to the MULTILAB work area or manual proto-typing board [and] solder[ed] in. MULTILAB comes with a special universal program to which the user adds about 20 lines of BASIC code to turn the program into a voltmeter program or a frequency-counter program.-Electronics Newsletter

SCREEN GRAPHICS 64, $25 from Abacus. Graphic aid.

By far the hottest program here. Adds commands to BASIC to aid graphics, including multi color, hi-res, and sprites. Includes a thorough manual, stunning demonstration program, and a very good disk tutorial. SCREEN GRAPHICS 64 is now a permanent part of my own library - mostly because it's a lot of fun to play with. Some advice to Abacus: forget the games and stick with stuff like this. You do a much better job with it.-BMD

SYNTHY-64, $30 from Abacus.

See under Commodore 64 Music Reviews.

SYSRES(64), $80-95 from Solidus International. Programmer's aid. Requires 1541, 2031, or 4040 disk. Printer optional. DOS protected. Anti-warranty.

SYSRES created quite a furor in Midnite when first released for PET/CBM models last year. Some readers felt it was the best programmer's aid of all, and others (including me) preferred POWER combined with POWER-AID. My reasoning was that, regardless of options, having a protected utility program that wipes memory if it detects "tampering" is dangerous, and inferior to a ROM-protected program. Each had equally valuable commands the other lacked. But the 64 situation is different. Although POWER is out for the 64, ATUG's POWER-AID program that made it a match for SYSRES has not been converted. I've also not seen its competitor, VICTREE, for comparison. (VICTREE owners seem numerous and happy.)

SYSRES is an excellent program. Unless you want your programmer's aid in ROM, SYSRES should be entirely adequate, though it lacks internal documentation that helped Arthur Cochrane add POWER-AID to POWER. Though it must be loaded from disk for each use, it doesn't destroy a BASIC program already in memory (great, because you want to load it after a program crashes!). On the 64, SYSRES hides itself behind BASIC, leaving all RAM free, except one page of memory at $C000. Includes a utility to relocate a CBM competitor program for that space.

Diskette supplied doesn't run SYSRES, but rather creates it on another diskette. Like a genie, it gives you 3 chances to make a spare "virgin" (never formatted) diskette. It creates a different version using RTC's C-LINK and 4040 drive than when using a 1541 alone. If you use your 64 both ways, make 1 copy for each version with your best diskettes, and don't use the wrong version.

What does SYSRES do? 1) As an editor, it: edits sequential files from BASIC like CBM's EDITOR/ASSEMBLER, scrolls listings both up and down, copies the screen to a printer, and gets out of the way when a program RUNs (to keep the program from running too slowly). 2) It adds to Bob Fairbairn's old PET/CBM DOS support ("@L" lists a file from disk without loading it into program memory, and "*" dumps the output of other commands to a file or printer). 3) It includes an improved version of Commodore's old 2K BASIC AID, plus new commands: EXEC "run"s a sequential file as though typing on the keyboard; GET loads a sequential file; KEY defines keys for special functions; and OLD undoes a NEW. Best among the improved commands: RENUMBER changes some or all line numbers in a program; CHANGE has 700 combinations of sub-options and is easier to use with info inside quote marks than POWER's equivalent command; MERGE mixes programs line by line. Also modifies standard commands: CLOSE undoes any current CMD commands; CMD no longer sends "ready." to files; LIST formats programs with good structure; and RUN ignores garbage on the screen. MON exits BASIC to a machine-language monitor. Also includes several versions of EXTRAMON, our #2 favorite. Last, but not least, SYSRES sets the screen to a pleasant green on black with grey border at power-up. Now that I have SYSRES, I may quit doing all my development work for the 64 on a CBM. My tools were much better on the CBM before; now I'm not so sure. Recommended.-JS

VIC 20 REVIEWS

VIC 20 Assembler

FRENCH SILK ASSEMBLER Update, by Don French.

So far I am quite pleased with the performance of the "Editor," "Assembler," "loader," "Disassembler" and "Monitor." My cassette version does not include disk versions of these programs (one of my gripes). The documentation in the manual is good, but could use a lot more examples. Another helpful item would be a command summary for all programs printed. Constantly flipping back and forth to find something has almost destroyed my copy. Still, I am generally satisfied and would recommend the French Silk ASSEMBLER to others.-Darrell R. Sage

VIC 20 Book Reviews

LEROY'S CHEAT SHEETS, VIC Keyboard overlays, $4 from Cheatsheet Products.

Are plastic-coated cards that slip over the VIC keyboard after you cut out the center of the sheet where indicated. The sheets are printed with job aid information about the program or cartridge they go with. The one tested was for Commodore's SUPER EXPANDER cartridge. The sheets seemed a bit too lightweight and flexible for my taste, but more important, they didn't include enough information to make me want to clutter up the top of my computer with one. I'd get more good out of a 3 by 5 card taped to the wall behind the VIC. However the idea is good. This kind of aid is needed, and fits well on VIC. I'd just like a slightly more sturdy product and a lot more information on the aid.-JS

PAL (Programmers Aids & Logs), $10 from P. M. Products. Programmer's aid worksheets.

This series of worksheets offers something for everyone from beginner to expert. Includes the following sheets: 1) A BASIC crib sheet lists valid BASIC words and simple POKE's for screen, color and sound mounts above the top row of keys (I'd have liked it better in plastic). 2) A double sheet defines keyword with an example of use. 3) On the back side of my personal favorite, an EZ FLOW flowcharting worksheet, is printed a list of program variable names and uses, data file names, numbers and uses, starting line numbers, and purpose of subroutines. 4) A simple color chart shows what to POKE 36879 with for various border and background colors. 5) EZ Graph shows sets of graphic characters, and screen layout form for POKEs to screen and color memory on 5K and 16K VIC's. 6) EZ Note is a simple chart of POKE locations and numbers for 3 octaves of music. 7) EZ Key gives PETSCII and keyboard matrix PEEKs for each key. 8) Worksheets create programmable characters sets and log cassette program locations. 9) Only 3 sheets seemed wasted: the programming sheet allows only 44 columns per line, the software listing largely duplicates the cassette log, and the hints page isn't as usable as a 3x5" card file. Recommended to any VIC owner who wants to learn programming.-JS

Word Processors and Text Editors

QUICK BROWN FOX Update, from Quick Brown Fox.

Everything you said about the QUICK BROWN FOX is true, and more. The manual is confusing. You get a general one plus notes for your particular computer. It's extremely difficult to plug the cartridge into the rear slot, but it plugs easily into the expander board (and don't forget to wrap the ribbon cable with foil). On power-up, you have closer to 1500 bytes free with the unexpanded VIC, because any editing takes up space. The QBF will so far not support the GEMINI printer, and I would not recommend it for any printer using the parallel port. To print, I wrote a program that reads the QBF saved files, but this is a big inconvenience. I contacted QBF, but they didn't know what to do.-Harold Miller

TOTL.TEXT 2.5 Update (old non-chickspeed version), from TOTL.Software.

I'm typing this letter on my VIC using TOTL.TEXT 2.5. They offer upgrades of TOTL.TEXT at reduced rates for registered owners; however, they will not upgrade the 2.5 (VIC version) to 2.6 (64 version). Anyway, I've ordered the 64 version so that I can use my VIC text files on the 64. Generally Totl has been both responsive and prompt; however, delivery on 2.6 has been a little slower than usual. I also have purchased WORDPRO 3, but my original copy of it would not load (file not found), nor could I load the directory off the disk. I hope that the problem was a bad disk and not secondary to the copy protection scheme.

By the way, TOTL.TEXT does not program around the level 2 BASIC printing bug (no line feed after a null Print#) in the version that I have,, but this is easily fixed, and reportedly has been fixed on newer copies. The Microspec Data Base apparently has the same problem, but since it is compiled, the fix is not so simple. I have not heard back from them on this point.-Wayne Mathews

WORD WIZARD, $35 from Micro-Ware Distributing. Machine-language. On cassette, can use disk. Needs 8K expander. Anti-warranty.

WORD WIZARD is the cheapest all machine-language text editor I've seen. It is simple and fast, and far more convenient than competitors requiring line numbers. It moves the cursor by joystick or with the usual VIC editing keys. Included stick-on job aids allowed me to work even before reading the mostly-adequate manual. WORD WIZARD's few advanced editing features include: search, delete-word, and restore-deleted-block. It also warns me before clearing all text, unlike a costly competitor. On the other hand, TAB is missing. Formatting is simple but adequate, including centering, page numbers, justifications, and 4-way margins, but not bold-face or underlining. Having a red current line and an orange border is jarring, but other colors are pleasant. I still can't print both upper and lower-case properly through my CARD/? interface and SELECTONE printer, despite commands to use any ASCII character. (See separate reviews under Commodore 64 Hardware Reviews.) To get around this, I may need the simple user port parallel interface built into the program. Meanwhile, the program is a bargain for those with VIC printers.-JS

WORDCRAFT 20, $200 with 8K RAM built-in, $100 without added RAM. From UMI. Cartridge word processor.

I was only able to look at this briefly at a dealer's, but that was enough to reinforce my earlier impression that this is the Cadillac of VIC text editors (and very likely the only one worthy of being called a word processor.) Despite the VIC's tiny screen, WC20 formatted text into full-width lines, using horizontal scrolling as needed. Unlike EASY SCRIPT for the 64, it scrolls a

readable 1Ø characters at one clip, and uses the usual cursor-left to get back to the right end of the prior line. Like WORDSTAR, it formats its text on the screen immediately, so what you see is what you get - not my favorite approach, but others seem to like it. Though I didn't have time to test them, the manual lists the usual commands and format options you expect in a word processor. Another valuable feature is that WC2Ø files can be used by WORDCRAFT on the CBM, s that cheap VIC's can act as remote entry terminals for Commodore's best. Until the new ly-rumoured VIC version of WORDPRO is released, this is the one to beat, especially if you already have added memory and can get by with the $1ØØ version.-JS

REVIEW #2: I find that WORDCRAFT 2Ø is as "friendly" to use as WORDCRAFT 8Ø, which I use extensively. You are able to save to either disk or tape, simply by telling WORDCRAFT which one you will be using when you bring the program up. Commands and controls are easy to understand and use. WORDCRAFT 2Ø does all that WORDCRAFT 8Ø does, except headers and trailers. Since the VIC has a 2Ø column screen, WORDCRAFT 2Ø gives you the option to set your margins for a normal 8Ø column page and then scrolls horizonally. I find this particular feature drives me nutty, so I choose not to use it. I prefer to use the "small" screen to type the material in, and then set my margins to normal 8Ø column width just for printing. All in all, I found it a powerful wordprocessing program. The only draw back I see is the price. But if VIC owners want a "real" wordprocessor for their machine, I would definitely recommend WORDCRAFT 2Ø.-C.J. Donovan

VIC 20 Compiler Reviews

TINY COMPILER, from Aardvark-8Ø.

TINY COMPILER changes BASIC programs into machine language programs that will run much faster and use less memory. Among this compiler's limitations: You are only allowed 3Ø lines of BASIC code for use with the compiler program and ...a subset of BASIC because this compiler does not support the full VIC BASIC. The biggest single limitation... was deciphering the instructions. What a mess! Someone put a lot of effort into writing the program. It's a shame that the same effort wasn't put into the instructions.

Don't buy this program strictly as a compiler because of its limitations. However, I would recommend this program to anyone interested in teaching themselves to program in machine language. Just type in a short BASIC program, following the compiler rules, and run the compiler program. Now you have a BASIC program and its machine language equivalent.-Steve Garman (Hardcopy)

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VIC 20 Game Reviews

BEYOND II, from Foxfire Systems.

A question and answer game. Well written and stimulates the imagination as you play along. [Similar to] DEATHSHIP, by Aardvark. Both are highly recommended to anyone who enjoys reading a good book.-Hank Mroczkowksi (Hardcopy)

GRAVE ROBBERS, $15 from Victory Software.

The picture is all you see, even with the "LOOK" command. It makes excellent use of the graphic and sound capabilities of the VIC with a good representation of a thunderstorm in a graveyard. You can only see when the lightning flashes. It took me about four hours to solve and my eight year old son, Joel, about one week to get where he is with very little help from me (about half way). It's most pleasing to see him use the dictionary.-Hank Mroczkowski (Hardcopy)

KONGO KONG, $2Ø from Victory Software.

It's good! Most of the program is in BASIC with enough machine code to speed the play to rival that of the arcade version [DONKEY KONG]. As addictive as Commodore's NIGHT DRIVER, or JUPITER LANDER.-Hank Mroczkowski (Hardcopy)

PIRATE ADVENTURE, $35 cartridge from Commodore.

The theme of the game is very similar to ADVENTURELAND ADVENTURE. To win the game, you must locate and recover two treasures left on Treasure Island by Long John Silver. I haven't gotten that far yet. These adventure games are the most fun I've had with my VIC. I highly recommend any of the Adventure cartridges. ADVENTURELAND ADVENTURE even got my wife using the computer to play the game, a feat I couldn't do. These games sell for about $35 at most any place that sells Commodore products.-Scott Adams (Hardcopy)

VIC 20 Ham Radio Reviews

HAM DATA, SUPER LOG I

I am an amateur radio operator "HAM," and I use the VIC-2Ø for just about everything I do, from sending code to logging. I just got the HAM DATA, Super Log I. The menu has load, view, add, change, search, save, and end. It features Auto-time, Auto date, Fwd/Rev scan, Graphics, saves all std log entries, 4-way search, QSL update, auto memory adjust, self prompting, minimum 3K expansion. I use this to keep up with my radio contacts and cards sent out and received. It is easy to use, with a very good manual. They also will do some custom programming for you. I find this log program to be very complete and really easy to search back and find an old contact which was made.-Fred Jones (WA4SWF, 511 Lackey Av., Louisa KY 41230) [Fred didn't say where to get this product; write him or "call" him if you're interested.-ES]

VIC 20 Hardware Reviews

Memory Expansion Boards

CARDBOARD 6, $100 from Cardco. 6-slot expansion interface board.

This board is far superior to the 3-slot version. There are two switches for each of six slots (so you can switch in just the 3K memory on a SUPER EXPANDER if all you need is extra memory) and a reset switch. They don't mention this, but certain cartridges may not work unless the entire ribbon cable is wrapped in aluminum foil (especially true for QUICK BROWN FOX cartridge).-Harold Miller

Other Equipment

AUTO CLOCK, $130 from Progressive Peripherals & Software. For any VIC. Full 90 day guarantee.

REVIEW #1: I've long wanted to hook a clock to my 8032, never expecting my VIC would get one first. On power-up or reset, AUTO CLOCK automatically sets TI$ to the correct time, and can trigger either a visual and vocal alarm or a 300 watt device at any preset time up to the useful life of its built-in battery (1-3 years). It also has 2K of battery-powered CMOS memory that can store a program to be restored and run in the computer on power-up. That program can then modify and save itself to the battery-memory, reset the alarm to another time, and switch the computer off until alarm time. It also has a manual control.

To assure accuracy, the unit is crystal-controlled, with a small adjusting capacitor. Construction quality is also excellent, with gold contacts, a plated-thru board and fully-socketed construction. However, anyone who didn't understand the last sentence may need help using this product, because you must unscrew the case and solder 4 wires and a resistor to make it work. FD found a unique way to open the case--dropping it on a tiled cement floor. You connect the unit by cutting either the wire from the VIC power supply or an ordinary attached extension cord in half, and connect it back up through the AUTO CLOCK.

Comes with 4K of built-in programming, to do all the above, plus easily set and read clocks and alarms from BASIC or machine-language. It can also continuously display the time at any screen location and in any color (until you need to use the cassette.) For the forgetful, AUTO CLOCK will also tell you the day of the week, days in the month, and leap year information. The two main limits are 1) the need to solder before using it, and 2) it "lives" in the same memory as many cartridge games. Expansion boards that allow you to switch the clock out temporarily are also plentiful (see review of Precison Technology's motherboard.) It is unfortunate that VIC accessories now cost more than the computer itself, but $130 is not unreasonable for such a product. Similar Apple products sell for $250 and up. After only one day of use, my recommendation is tentative, but enthusiastic. (Look for a follow-up later.) Recommended.-JS

REVIEW #2: In the questionable category of new products is the AUTO CLOCK board for the VIC from Progressive Peripherals and Software. The plug-in card contains a battery powered clock/calendar to maintain current time when the VIC is powered off and has 2K of programmable storage of its own and the ability to power the VIC up at a preset time and automatically run a program. Use of this board will probably allow you to create a very sophisticated alrm or home control system. But you can buy another VIC for the price of this board - $129.95. (It will soon be available for the 64, too.) -JKJ (OCCUG Newsletter)

See reviews of the following products under CBM/PET hardware reviews or Commodore 64 Hardware Reviews:

BRANDING IRON Update. EPROM programmer.
E-P-ROM, $7-10 from Richvale Telecommunications. EPROM carrier.
CBM 1701 COLOR MONITOR, $300 from Commodore.
GEMINI-10 PRINTER, $350-420 from many dealers. Dot matrix printer.
SEIKO GX100 PRINTER (BANANA), $249 from Leading Edge. Dot matrix.
SELECTONE TYPEWRITER, $695 from Selectone. Olivetti Praxis daisy-wheel electronic typewriter with Centronics parallel interface.
CARD?, $80 from Cardco. Centronics parallel/serial printer interface.
CX-6401 PARALLEL PRINTER INTERFACE, $90 from ECX Computer Company.
TYMAC UNIVERSAL TAPE INTERFACE, $50 from Micro-Ware Distributing Inc.
TRS-80 LINE FILTER, $50 from Radio Shack.

VIC 20 Magazine Reviews

THE VIC-NIC NEWS, bi-monthly, $6 per year from The Byte House.

8 page newsletter consisting of several brief listings, a page of reviews, a crossword puzzle, some ads, a question column, and errata. A decent price from friendly folks, but what is a VIC-NIC?-JS

Sample from a column labeled "Ask Dennis", by Dennis McCormack:
Q. Is a 40/80 character/line adapter worth the expense? TA Stevens, El Paso TX
A. The disadvantages of having such an option seem to outweigh the advantages. If you are using a color TV set, you will find that smaller characters are not as crisp because the convergence must be perfect for reproduction... Also few programs will run without disconnecting the adapter.

VIC 20 Science Reviews

MINI-COUNT V1.0, from Optimized Data Systems.
See review under CBM/PET Science Reviews.

MULTILAB, $239 from Metaresearch. Scientific instrument controller. Includes software, documentation, card, cable, and external manual-prototyping board.
See review under Commodore 64 Science Reviews.

VIC 20 Utility Reviews

GRAPHVICS, $25 cassette or diskette from Abacus. 3K expansion needed.

Very much like SCREEN GRAPHICS 64. Tape includes one version for VIC with 3K expansion, another for 8K or more. Includes beautiful demo program, but no tutorial like the 64's. Has a thorough manual. This is every bit as good as the 64 version - as a matter of fact, I think it's even easier to use. Main program tucks itself away in memory and is then accessed by a SYS command. Highly recommended.-BMD

PROGRAMMERS AID CARTRIDGE

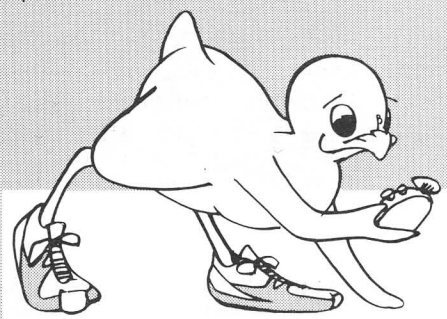
This is really a very good software to get. It has helped me alot in programming and is really a good fast time saver, too. It takes a while to get used to the key functions, but once you get past that, it's features are just really great. I like the auto line number feature the best.-Fred Jones

ROM RABBIT, $5Ø from Eastern Software House. 2K machine language EPROM.

ROM RABBIT is not just another plug-in board for the VIC 2Ø. It is a machine language utility program that allows you to load or save an 8K program in about 3Ø seconds [instead of] 3 minutes. I haven't had a bad load yet. The utility EPROM also contains several other useful commands available whenever the ROM RABBIT is activated. A [bit] memory test feature tells you exactly where a problem exists. It also contains a Hex to decimal routine, a Decimal to hex routine, and a RABBIT to VIC BASIC [routine]. The normal VIC load and save are still available even when the rabbit was installed. It [also] provides a piggyback expansion connector on the rear of the plug-in board that will allow you to plug in any other cartridge not requiring block 3 in memory. It has been available for the PET for several years and seems to have passed the test of reliability. A single disk drive takes about 22 seconds to load an 8K program and the ROM RABBIT takes 32 seconds; that's a high price for only 1Ø seconds improvement.-Steve Garmon (Hardcopy)

VIC-TREE Update, $9Ø from Skyles Electric Works.

It is an invaluable aid in the development of software for this system. It is everything it claims to be. With their parallel printer interface connected to the GEMINI 1Ø, I can do dot-addressable graphics, backspacing, underlining and much more. It's worth every cent. I have discovered only one glitch so far: It is supposed to be transparent to the SUPER EXPANDER, but after performing a DSAVE (Save to Disk), the function keys no longer generate the SUPER EXPANDER keywords, and the computer may crash if you then press one of the function keys.-Harold Miller



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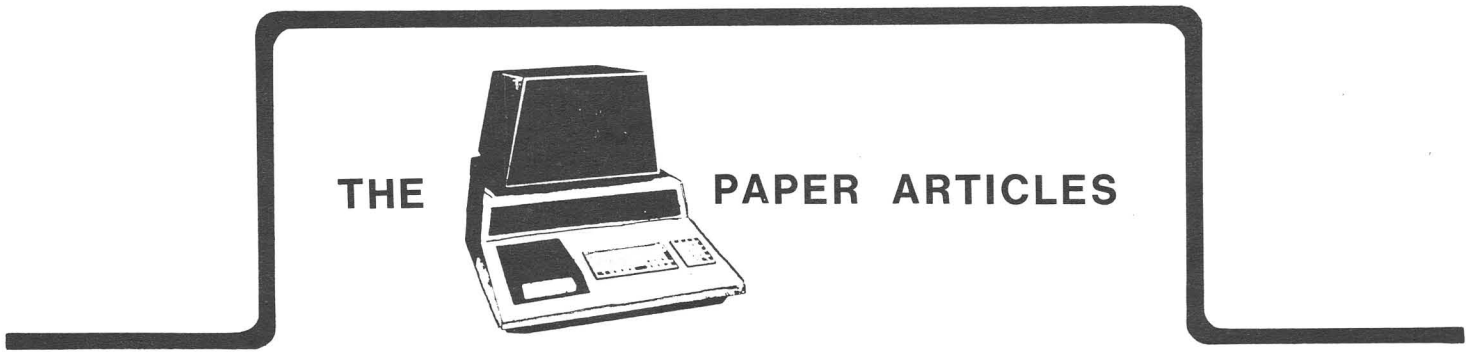

Article:
MIDNITE MUSINGS

Spirituality and the 64

by Herb Gross

Midnight (actually 11:00 P.M.) is my time to spend with the 64. My wife and kids are asleep, my chores are done and there's nothing to worry about until the alarm goes off at 6:30. I usually can't sleep anyway. I'm one of those whose biological wake up time is from noon to 2:00 A.M. but whose life doesn't work that way. This means that there has always been time for hobbies and red eyeballs.

So last night I was sitting there in silent communion with my computer, marveling at the mysteries of machine language. It struck me that never before in my conscious memory had I been faced with such a "tabula rasa", this empty screen before me. Here within the confines of this screen, I had the powers of a creator or destroyer. Men using machines with less inherent power found mathematical analogs of the real world and designed the atom bomb. What could I do if I wished?

I wonder how many people using computers for work or play all the time ever take some time out for reflection in front of an empty screen. At your fingertips you have immense power. What do you use it for? All you have to do is turn the machine off and on again to create a clean slate, a new beginning. In the rest of your life it may not be so easy; here is a chance for renewal.

What is the most important thing you want for the rest of your life? Type it in. You don't even need a word processor. A couple of REMarks will do. Think about what you've written. Maybe you'll change some things. Maybe, you could start the rest of your life right now. It might not be that difficult to program.

Writers often sit and stare at a piece of white paper, trying to get something of themselves on it. Since I never could write well, I missed this experience. Facing a blank screen is similar. The blinking cursor gives it a feeling of immediacy, a pressure to do something right away. Turn the cursor off. The pressure can be lived with. Doing the wrong thing for you can't be. Take your time. Dream a little.

In some sense, programming is just the art of defining limits. Unlimited and undefined ability has nothing to work on or work with. It is only when force is known and operating within understandable limits that it can be worked with. Sometimes the wrong limits are set and the program crashes. I work in a state hospital. People crash that way as well. But you can always restart a computer....and thinking about that....could help you restart yourself.

Article:
BEGINNING BASIC

Screen Clear From Cursor

by James R. Pring

If you've ever needed to clear the screen from the current cursor position to the end of screen memory, this subroutine is for you. This is very handy in games where information on the lower portion of the screen in constantly changing. The only requirement is a string of at least 40 spaces defined as LC$.

At the end of the routine, the cursor will be left at row 25, column 39. A carriage return from here will cause the screen to scroll (probably not what you want to happen.) Be sure to reposition the cursor immediately before or after pressing RETURN. The only tricky part is line 9160 which restores the screen line link table at $00D9 to $00F2 (decimal 217-242). If this is not done, data PRINTed in the area just cleared will yield rather unpredictable results.

Although the routine was written for the 64, it should work equally well on the VIC 20 as long as the POKE in line 9140 is set to the last location in screen memory and the screen line lengths are adjusted.

```
9100 REM ** CLEAR SCREEN FROM CURSOR **
9105 PO = POS(0) : IF PO>39 THEN PO = PO-40
9110 PRINT LEFT$(LC$,40-PO);
9120 FOR X = PEEK(214) TO 23
9130 PRINT LEFT$(LC$,40); : NEXT
9140 PRINT LEFT$(LC$,39); : POKE 2023,32
9150 REM * RESTORE SCREEN LINE LINKS *
9160 FOR X = 217 TO 242 : POKE X, PEEK(X) OR 128 : NEXT : RETURN
```

Article:
ADVANCED BASIC

Beware the POKE 0

by Garold Stone

A unique feature of the 64 is its use of addresses 0000 and 0001 to switch addressing between ROM and RAM and control other functions like the cassette recorder. Obviously, indiscriminate pokes to addresses 0000 and 0001 are not recommended, because they may upset the delicate RAM/ROM balance or disable the cassette recorder. Unfortunately, it is all too easy to inadvertently poke to address 0000. 64 graphics and sound functions require a plethora of pokes to bring them to life. A generally good programming technique is to set the poke addresses equal to variables. For example:

```
10 AD = 53876
20 POKE AD,Value
```

This speeds execution and makes a program easier to read. The problem comes if you forget to define a variable before using it in a POKE. Undefined variables in 64 Microsoft BASIC are given a value of 0, so the result is a POKE 0, - and you're "out to lunch." Mistyped variable names may also produce a poke 0. Sometimes, the cassette motor will mysteriously turn itself on to warn you.

This was not a problem with the earlier model PET/CBM. Address 0000 held a jump instuction for the USR() command. Poking to address 0 would cause a crash when USR() was called. But since USR( ) is not used very often, such an error usually went undetected.

The poke 0 is <u>not</u> a bug in the 64. With the added power of the 64 come added responsibility to follow good programming practice and make sure all variables are properly defined.-Garold Stone

Article:
LANGUAGES (PASCAL)

Waterloo MicroPascal On the Commodore SuperPET

by David Rine
Western Illinois University
Macomb, Illinois USA

USING MICROPASCAL FOR INTRODUCTORY PROGRAMMING:

The University of Waterloo MicroPascal (1981) in the SuperPET is an excellent student work-station for beginners learning Pascal. Since MicroPascaL follows the International Standards Organization proposal, it satisfactorily covers language elements for Advanced Placement in Computer Science.

This interpretive Pascal with full-screen text editor, Waterloo microEdit, and interactive debugger, Debug, lets the beginning student easily and efficiently create and maintain program and data files. The screen editing keys of the Commdore SuperPET very nicely support these manipulations. The interactive debugger allows single-step operation, breakpoints and interactive examination of variables at execution-time. When an error occurs, the system automatically moves the screen cursor to the specific error for correction. The screen editor also allows the user to include, within the current text file at any point, other text files from disk storage, and allows limited word processing. In summary, the implementation is more 'seamless' than some other implementations of Pascal.

COMPARING MICROPASCAL WITH UCSD PASCAL:

First, MicroPascal is for beginners. It does not contain system/user-defined library facilities, comprehensive graphics capabilities, string functions, nor various language system options and memory management facilities that are part of UCSD Pascal. However, a disadvantage of UCSD Pascal (for example, implementations on the Apple II+, IBM PC, Commodore 8Ø86, and TRS-8Ø Model III) is learning to use the three separate software tools of screen editor, filer, and compiler. Some introductory students (1) spend too much time learning them, or (2) become lost while using these individual tools to encode, store, and prepare each Pascal program for execution. With MicroPascal, the average beginning student would not become bogged down in lost time. Therefore, it is recommended that UCSD Pascal be used in the second part of Pascal programming studies, when more substantial software is designed and developed.

DOES MICROPASCAL SUPPORT ADVANCED PLACEMENT IN COMPUTER SCIENCE?:

Unfortunately, MicroPascal does not go far enough to support some advanced applications in later parts of the AP CS model course (curriculum), such as graphics, libraries of code files needed for large program projects, and word processing programs. Also, the student does not get a good understanding of how important software tools work, including compilers, library utilities, file management, linkage editors, and assemblers. On the other hand, students in the first part of the course may waste too much time figuring these different tools out with UCSD Pascal. MicroPascal nicely overcomes these introductory obstacles.

I have observed teachers and students under both kinds of Pascal, on the Commodore SuperPET and IBM PC, and have used the systems myself. I feel either of these two Pascal implementations, MicroPascal and UCSD Pascal, when implemented in a technically sound hardware environment such as the Commodore SuperPET and IBM PC, make excellent workstations for learning Pascal programming. It is not an endorsement for writing commercial/professional software, where 'seamless' and 'hidden' tools for developing software have a different meaning.

AND FOR THE FUTURE:

Looking into the future I would predict the following possibilities:

* IBM PC's will soon support MicroPascal, to complement their UCSD Pascal.
* Commodore SuperPET's may enhance MicroPascal with a powerful extension.

A software house will implement an extension of standard Pascal that supports both features of MicroPascal and UCSD Pascal, companies will give users 'both implementations' for the 'price of one', or they will design a new, improved extension of standard Pascal that meets some educational market demands.
A new language in the Pascal-like family of languages will arise that meets new standards of educational computing. Perhaps by ED-COMPCON-83 (October 1983, San Jose, CA) we will hear more.

Article:
PET/CBM GRAPHICS

Adding a New Character

by Gerald Hasty
Gila Newsletter

I wished to change one of my characters for my PET 2001-32 4.0 upgrade. First I needed the screen value of the character I wanted to change. By printing the character and peeking the screen location it occupied, I found it. I then placed a borrowed character ROM in an empty ROM socket. (This came from my children's PET; they squawked for the two days it was down.) I multiplied the previously found screen value, added the result to the base address of the ROM socket in use, and converted this number to hex. Then I called the monitor and made a dump made of the eight bytes, starting at the calculated hex address.

To make the letter "K," I drew a matrix:

```
8421     nibble one
   8421  nibble two

00000000 byte one
00000000 byte two
00000000 byte three
00000000 byte four
00000000 byte five
00000000 byte six
00000000 byte seven
00000000 byte eight
```

and read locations $42, $44, $48, $70, $48, $44, $42 and $00 to produce:

```
8421     nibble one
   8421  nibble two

0X0000X0 byte one
0X000X00 byte two
0X00X000 byte three
0XXX0000 byte four
0X00X000 byte five
0X000X00 byte six
0X0000X0 byte seven
00000000 byte eight
```

This insures that I have the right location and character for replacement. If I read the hex locations backwards, a new character is designed, giving me the eight replacement bytes. I take a 2716 EPROM, the character ROM and the replacement values to a friend that can burn 2716's for me. I exchange the original ROM with the new EPROM, and when I press the key of the old character, the new character is seen on the screen in its place. IT WORKS!

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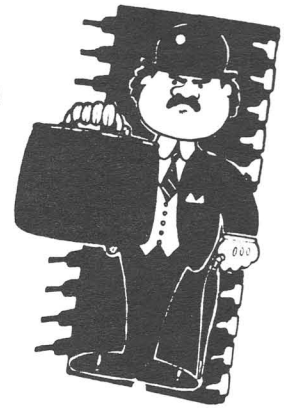

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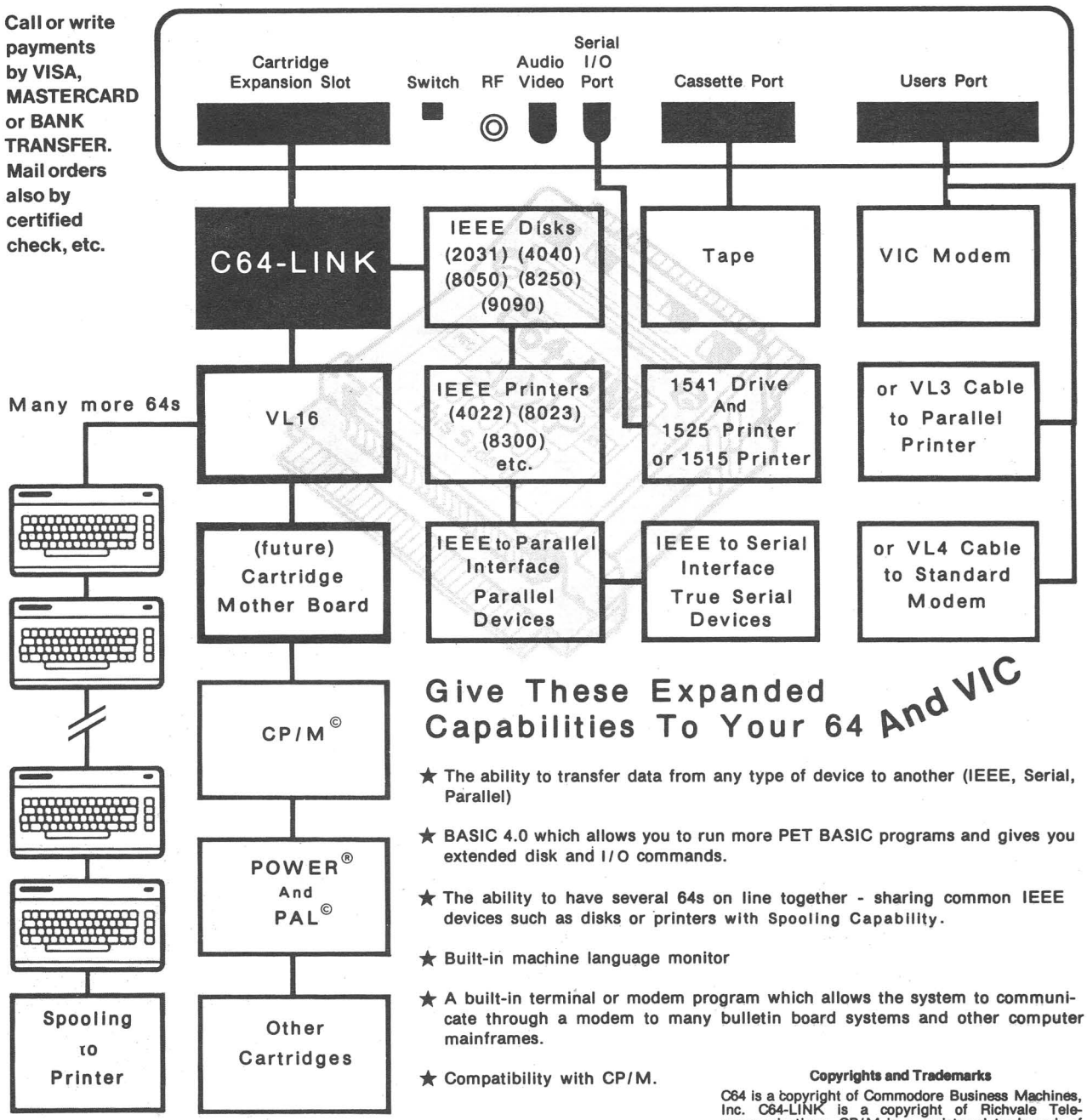

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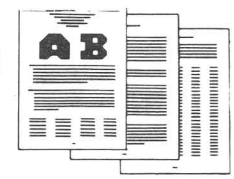

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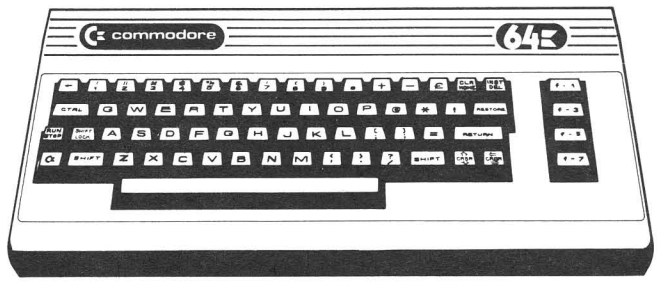

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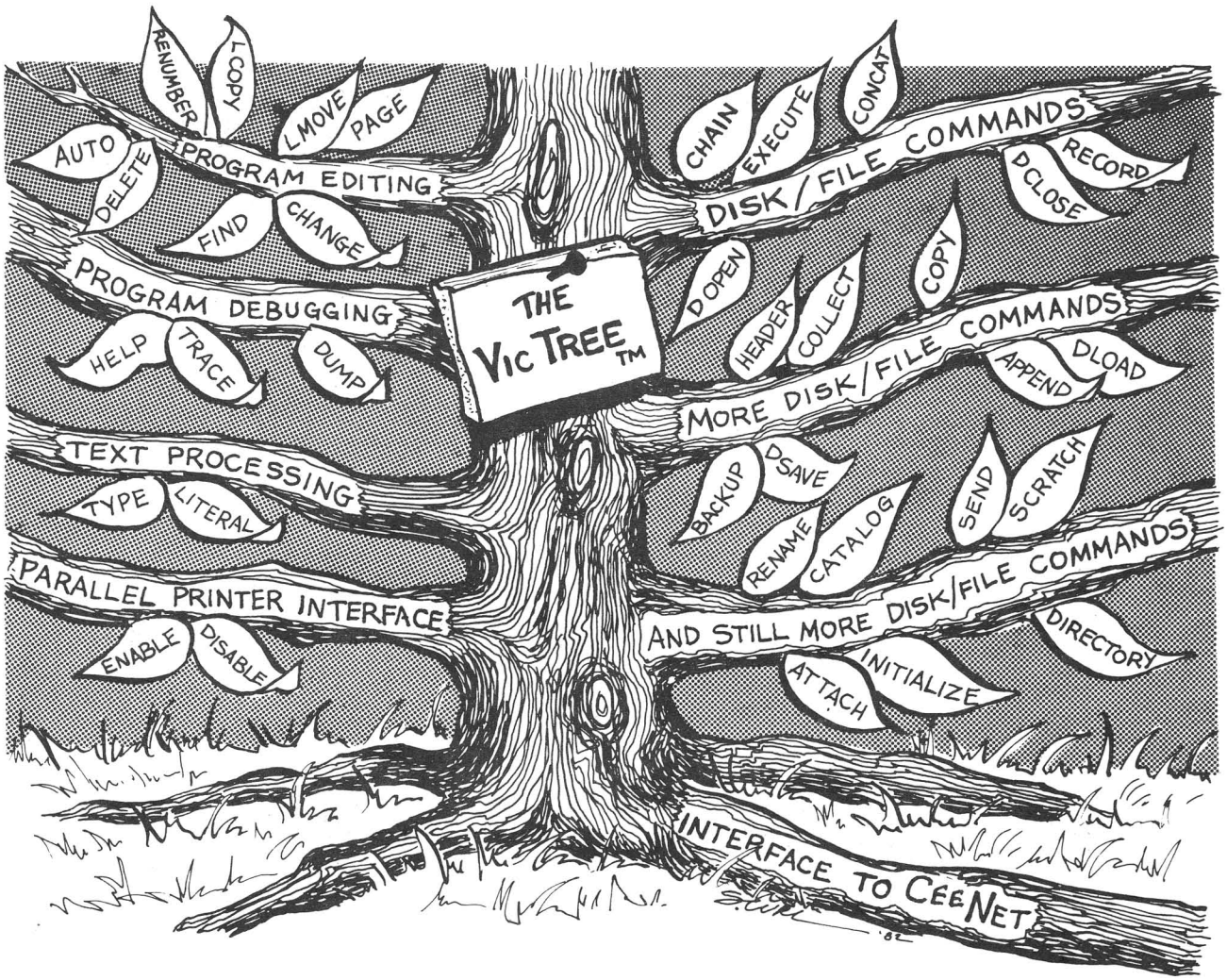

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United Microware Industries (UMI)	3431-H Temple Av., Pomona CA 91768
VIC NIC NEWS	Box 981, Salem NH 03079
Victory Software Corp.	7 Valley Brook Rd., Paoli PA 19301

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